

FACT SHEET FOR THE DRAFT CONCENTRATED ANIMAL FEEDING OPERATION GENERAL PERMITS

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND
STATE WASTE DISCHARGE GENERAL PERMIT

DECEMBER 2022



ADA ACCESSIBILITY

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PURPOSE OF THE FACT SHEET

This fact sheet is a companion document to the National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Concentrated Animal Feeding Operations (CAFO general permit). It explains the nature of the proposed discharges, summarizes the history of the permit, documents the Washington State Department of Ecology's (Ecology) decisions for limiting the pollutants in the wastewater discharges, provides the regulatory and technical bases for those decisions, and fulfills the requirements of Washington Administrative Code (WAC) Section 173-226-110.

PERMIT SUMMARY

The permit authorizes discharges associated with manure, litter, process wastewater, and other organic by-product from CAFO production areas and land application fields. The permit limits the discharge of pollutants to surface waters under the authority of the Federal Water Pollution Control Act (U.S.C.S. 1251) and limits the discharge of pollutants to surface and groundwater under the authority of Chapter 90.48 RCW. Ecology anticipates that Permittees' diligent implementation of the requirements of this permit will result in discharges that do not cause or contribute to violations of state water quality standards.

¹ <https://ecology.wa.gov/accessibility>

SUMMARY OF PROPOSED CHANGES

Aside from clarifying and typographical changes, the draft CAFO General Permits proposes the following changes from the current permit (effective January 2017 through March 2022).

Draft Permit Sections(s)	Previous Permit Language	Draft Permit Language
<i>S1.A Facilities Required to Seek Coverage under This General Permit</i>	Details on CAFOs required to obtain permit coverage was located in S1 Permit Coverage and S.2.A Who Must Apply for Coverage	Permit language in S1 and S2.A from the previous permit were combined into this new section in the draft permits.
<i>S1.B Activities Covered Under This Permit</i>	Duplicated requirement in general condition 1.	Removed repeated language
<i>S1.C Geographic Area Covered</i>	N/A	The draft permits add two new definitions to simplify the text elsewhere in the draft permit referring to annual precipitation. The new terms are: <ul style="list-style-type: none"> - Wetter Climates - Drier Climates
<i>S2.A. How to Apply for Coverage</i>	To apply for a permit, a CAFO mailed an application form to Ecology.	To apply for a permit, a CAFO operator mails or electronically submits an application form and a Manure Pollution Prevention Plan. They must revise the application or Plan if requested by Ecology. The public will have the opportunity to review the plan prior to issuing permit coverage.
<i>S2.B When Permit Coverage is Effective</i>	Section title was Permit Coverage Timeline	The draft permits changed the section title and moved the definition of when a CAFO operator becomes a permittee from the previous section <i>How to Apply for Coverage</i> to this section.
<i>S2.C How to Transfer Permit Coverage</i>	N/A	Permit coverage can be transferred only if the volume or characteristics of the wastewater or management practices are substantially

		unchanged. Otherwise, Ecology will require a new permit application.
<i>S2.D How to Terminate Permit Coverage</i>	<p>Cleaning and re-purposing requirements were located under S2.D.1.d. Waste storage pond decommissioning requirements were located in S2.D.1.d.ii</p> <p>Ecology may deny the request for permit coverage termination if the permittee does not meet the eligibility requirements.</p>	<p>Ecology propose a new section S2.D.2. <i>Facility Cleaning Requirements</i> They are referenced in S2.D.1.d. The waste storage pond decommissioning requirements are</p> <p>When a permittee does not provide sufficient information, Ecology may deny the request for permit termination. Permittees must submit the required reports in order for Ecology to make a determination.</p>
S3.A Total Maximum Daily Loads (TMDL) - Combined – Only	Conditional discharges must not exceed an establish load allocation for CAFOs discharging to waterbodies which have a TMDL.	Conditional discharges must not exceed an established waste load allocation for CAFOs discharging to waterbodies which have an EPA-approved TMDL..
S3.B Impaired Waterbodies- Combined – Only	Conditional discharges must not contain the pollutant for which a waterbody is impaired.	Conditional discharges to an EPA-approved 303(d)-listed waterbody must not contain the pollutant for which the waterbody is listed.
S3.D Land Application Fields - Combined – Only	Previous permit included the definition of agricultural stormwater in the text.	Ecology proposes to shorten the text to “unless the discharge meets the definition of agricultural stormwater”. Agricultural stormwater is defined in Appendix A.
<i>S4.A Pollution Prevention Plan</i>	<p>Permittees must submit a site-specific Manure Pollution Prevention Plan within 6 months of permit coverage.</p> <p>Updates to the Plan must be completed within certain timeframes. The permittee is not required to submit the revised Plan to Ecology.</p>	<p>The Manure Pollution Prevention Plan must be submitted with application, prior to permit coverage.</p> <p>The draft permits add two new definitions to simplify the text elsewhere in the draft permit referring to annual precipitation. The new terms are:</p> <ul style="list-style-type: none"> - Wetter Climates

		<ul style="list-style-type: none"> - Wetter Climates <p>If a waste storage facility has a leak detection system, the Plan must describe how the Permittee will test for leaks.</p> <p>Updates to the Plan must be completed within certain timeframes and must be submitted to Ecology for review. If changes are substantial, the Permittee must publically notice the updates.</p> <p>Revised the section layout for ease of reading and referencing.</p>
S4.B Production Area Runoff Controls	Pollution prevention practices in the production area must comply with S3.C	Added text from the requirement at S3.C to emphasize that the scope of this condition is not limited to track-out on roadways.
S4.C Storage of Manure, Litter, Process Wastewater, Other Organic By-Products and Feed	N/A	<p>Revised the section layout for ease of reading. The sections are now:</p> <ul style="list-style-type: none"> - Liquid Waste Storage Structures - Solid Waste Storage Facilities - Maintenance - Closure Procedures
S4.C.1 Liquid Waste Storage Structures	New or refurbished storage structures were required to achieve permeability threshold and distance from water table.	<p>All liquid storage structures must be below a specific discharge rate. The draft permit changes the way to measure the distance between the bottom of the lagoon and water table. Measurements start from where the liquid manure meets the liner and end at the water table.</p>
S4.C.2 Solid Materials Storage Structures	Runoff must be collected from structures that store solid materials. Permittees must document that nutrients in runoff are utilized by vegetative filter strips.	<p>Permittees must design structures for storing solid materials to minimize the discharge of pollutants. Site storage on impervious or low permeability soils. Direct runoff to liquid storage or a vegetative treatment area. Consider covering area.</p>

S4.C.3 Maintain Waste Storage Structures	N/A	Added the requirement that storage structures are inspected and maintained per S5.A
S4.F <i>Prevent Direct Animal Contact with Water</i>	N/A	Livestock must be excluded from the field discharge management areas established in S4.N.
S4.H <i>Livestock Mortality Management</i>	Mortalities must follow specific mortality handling techniques of burial, composting, or natural decomposition.	Ecology simplified the text in the permit condition to refer to requirements for each of the techniques previously outlined. Under the composting section, Ecology removed the requirement to comply with the out-of-date Ecology regulatory guidance.
S4.I <i>Manure, Litter, Process Wastewater and Other Organic By-Product Sampling and Nutrient Analysis</i>	The permit required annual sampling and analysis of nutrients sources to begin after TSUM200.	We removed the reference to TSUM200 from this section to allow sampling and analysis of nutrient sources before TSUM200. Land application may not occur before TSUM200. Samples must be representative of nutrients applied.
S4.I Soil Sampling and Nutrient Analysis	N/A	Ecology made changes to the formatting and order of requirements to make it easier to read and reference.
S4.J.1 Yearly Field-Specific Nutrient Budgets	N/A	Reorganized the list of required elements in a nutrient budget and clarified that the budget must balance nitrogen.
S4.J.3 Application Restrictions	Prohibits manure application to currently saturated soils.	Ecology is proposing to extend the prohibition to when forecast precipitation will saturate soils.
S4.J.4 Double Cropping, Winter Cover Crops, Perennial Crops	N/A	Clarify the requirement to evaluate soil nitrogen changes.
S4.J.5 Emergency Winter Land Application	N/A	Added the requirement to collect samples should a discharge occur. Clarified and reorganized the steps a permittee must take when making emergency applications.

<p>S4.K Adaptive Management</p>	<p>Permittees have the option of using groundwater monitoring to demonstrate manure applications did not impact groundwater.</p>	<p>Ecology added the requirement to conduct deep soil monitoring to assess whether groundwater impact is occurring. Ecology moved the requirement to conduct groundwater monitoring from the table to permit text at S4.K.3.</p> <p>Other changes in this section improved readability. Ecology added a risk level table for categorizing fields. Ecology converted the adaptive management table to two tables to accommodate climate-specific management actions.</p>
<p>S4.I Irrigation Water Management</p>	<p>The permittee must prevent irrigation water from exceeding the water holding capacity in the top two feet of soil.</p>	<p>The permittee must prevent irrigation water from exceeding the water holding capacity in the crop’s root zone.</p>
<p>S4.M Field Discharge Prevention – State-Only permit</p>	<p>The permittee must prevent all discharges to surface waters and conduits to surface waters.</p>	<p>Added specificity into the State Waste Discharge Permit’s field discharge prevention practices. Control stormwater, treat stormwater, and prevent contamination of stormwater. Require compliance with Ecology BMPs.</p>
<p>S4.M Field Discharge Prevention – Combined permit</p>	<p>Land application fields must have manure setbacks of 100 feet. Alternatively, the permittee can use a 35-foot vegetative buffer or berm. The permittee may propose another practice that is equivalent to the 100-foot setback.</p>	<p>Ecology rearranged this section to present the field discharge practices as a list of options. The manure setback, vegetated buffer, and berm were included. We added a new practice-- a riparian management zone. The permittee may still propose an alternative practice.</p>
<p>S4.P Emergency Procedures</p>	<p>N/A</p>	<p>Ecology added requirement that emergency procedures include how to sample discharges.</p>
<p>S5 Monitoring</p>	<p>N/A</p>	<p>Added paragraph about permit conditions varying based on climate.</p>

<p>S5.B Manure and Wastewater Monitoring</p>	<p>Samples must be analyzed for ammonia/ammonium, nitrate/nitrite, organic N, and P₂O₅.</p>	<p>Added requirement to monitor leaks, if a leak detection system is in place.</p> <p>Change two manure analysis parameters:</p> <ul style="list-style-type: none"> - Organic N is now Total Kjeldahl Nitrogen - P₂O₅ is now TP <p>Reorganized the section and added requirements that also appear in special condition S4.H for clarity.</p>
<p>S5.C Soil Monitoring</p>	<p>Spring soil samples must be analyzed for ammonia/ammonium, nitrate/nitrite. Fall soil samples must be analyzed for ammonia/ammonium, nitrate/nitrite, P₂O₅ and organic matter.</p>	<p>Add spring soil analysis parameter:</p> <ul style="list-style-type: none"> - Total Kjeldahl Nitrogen <p>Change one fall soil analysis parameters:</p> <ul style="list-style-type: none"> - P₂O₅ is now Phosphorus with method determined by pH
<p>S5.D Groundwater Monitoring</p>	<p>If the permittee conducts groundwater monitoring, they must develop and submit a plan to Ecology for approval. The plan must follow guidelines in <i>Implementation Guidance for Groundwater Quality Standards</i>.</p>	<p>If groundwater monitoring is required based on a determination of reasonable potential to impact groundwater quality, the draft permit condition outlines the procedures to design and install groundwater monitoring wells. These procedures are consistent with <i>Implementation Guidance for Groundwater Quality Standards</i>.</p>
<p>S5.E Surface Water Monitoring</p>	<p>N/A</p>	<p>New special condition with required procedures and parameters to sample in the event of a surface water discharge.</p>
<p>S6.B Land Application Records</p>	<p>N/A</p>	<p>Clarified the requirement to maintain records of the amount of nutrients applied to land and specified units for each item.</p>
<p>S6.D Monitoring Records</p>	<p>N/A</p>	<p>New special condition that lists the records related to S5.B, C, D and E that must be retained onsite.</p>

		This is not a new requirement, but makes record retention requirements more clear.
S7.A Electronic Reporting Requirements	N/A	New special condition requiring electronic report submittals.
S7.B Submittal of MPPP	Plan must be submitted within 6 months of coverage.	Plan must be submitted with the application for permit coverage, plus the MPPP must be submitted when the facility makes changes
S7.C Storage Assessment	Conduct an assessment of waste storage ponds according to NRCS Technical Note 23. If waste storage pond results in a category 3 or 4, develop a plan to bring it into category 1.	<p>The assessment procedure depends on the type of waste storage structure. Liquid waste stored in ponds with earthen liners must be assessed for compliance with S4.B by an engineer or through the NRCS Technical Note 23. Deficiencies found in the assessment must be addressed.</p> <p>Upright tanks and ponds with leak detection systems must follow visual monitoring procedures in S5.A or a leak detection plan.</p> <p>Solids material storage facilities must be evaluated for compliance with S4.B. The permittee must test the permeability of the soil pad. If the soils do not meet the permeability threshold, deficiencies must be addressed. Soil sampling beneath the soil pad may be used to determine the potential to impact groundwater.</p>
S7.E Reporting Permit Violations (previously Non Compliance Notification)	N/A	Added regional contact information for ERTS reporting. Added requirements for electronic reporting and water sample collection and analysis if a discharge to surface waters occurs.
Appendix A: Definitions	N/A	<p>Renamed lagoons as waste storage ponds. Added three definitions:</p> <ul style="list-style-type: none"> - Drier climates - Wetter climates

		- Qualified expert
Appendix B: Annual Report	N/A	Added requirement to report soil collection date and changed naming conventions of animal types.

Table of Contents

ADA ACCESSIBILITY.....	2
PURPOSE OF THE FACT SHEET.....	2
PERMIT SUMMARY	2
SUMMARY OF PROPOSED CHANGES	3
INTRODUCTION.....	6
PUBLIC PARTICIPATION	6
PUBLIC COMMENT PERIOD	6
PUBLIC HEARINGS AND WORKSHOPS	7
ISSUING THE FINAL PERMITS	7
BACKGROUND.....	8
DESCRIPTION OF ANIMAL AGRICULTURE INDUSTRY	8
WASTEWATER CHARACTERIZATION.....	8
REGULATORY AUTHORITY AND MAJOR CASE LAW	13
LEGAL AND TECHNICAL GROUNDS FOR PERMIT CONDITIONS.....	16
SEPA COMPLIANCE	24
DISCLOSURE OF BUSINESS INFORMATION	26
ECONOMIC IMPACT ANALYSIS.....	27
SPECIAL CONDITIONS.....	27
S1 PERMIT COVERAGE.....	27
S2 PERMIT ADMINISTRATION	35
S3 DISCHARGE LIMITS	40
S4 MANURE POLLUTION PREVENTION.....	43
S5. MONITORING	70
S6 RECORD KEEPING.....	77
S7 REPORTS.....	80
S8 APPENDICES	86
GENERAL CONDITIONS.....	83
G1 DISCHARGE VIOLATIONS	83

G2 PROPER OPERATION AND MAINTENANCE.....	83
G3 RIGHT OF ENTRY	83
G4 PERMIT COVERAGE REVOKED	83
G5 GENERAL PERMIT MODIFICATION AND REVOCATION.....	83
G6 REPORTING A CAUSE FOR MODIFICATION.....	84
G7 TOXIC POLLUTANTS	84
G8 OTHER REQUIREMENTS OF 40 CFR	84
G9 COMPLIANCE WITH OTHER LAWS AND STATUES.....	84
G10 ADDITIONAL MONITORING	84
G11 PAYMENT OF FEES	84
G12 REQUESTS TO BE EXCLUDED FROM COVERAGE UNDER A GENERAL PERMIT	85
G13 PENALTIES FOR VIOLATING PERMIT CONDITIONS.....	85
G14 SIGANTORY REQUIREMENTS.....	85
G15 APPEALS	85
G16 SEVERABILITY	85
G17 DUTY TO REAPPLY	85
G18 MONITORING BEYOND PERMIT REQUIREMENTS	85
BIBLIOGRAPHY	87
APPENDICES.....	88
APPENDIX A: GLOSSARY OF TERMS.....	88
APPENDIX B: ACRONYMS AND UNITS OF MEASURE	93
APPENDIX C: RESPONSE TO COMMENTS	95

List of Tables and Figures

Table 1 Field Risk Level.....	61
Figure 1 Composite Sample	89
Figure 2 Crest of a waste storage structure	89
Figure 3 Freeboard	90
Figure 4 Top of the bank	92

INTRODUCTION

This fact sheet is a companion document to the draft revised National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permits for Concentrated Animal Feeding Operations (CAFO general permits). It provides the legal and technical basis for permit reissuance required in Washington Administrative Code (WAC) 173-226-110.

The current permits, which expired on March 2, 2022, limits the discharge of manure, litter, process wastewater, and other organic by-product from CAFO production areas and land application fields to surface and groundwaters in Washington. This fact sheet explains the nature of authorized discharges, Ecology's decisions on limiting the pollutants in the discharges, and the regulatory and technical bases for those decisions.

The Washington State Department of Ecology (Ecology) is proposing to reissue the CAFO General Permits with changes. The proposed changes to the permit are documented in the Special Conditions section of this fact sheet.

This fact sheet does not contain any independently enforceable requirements. The General Permit contains all of the enforceable requirements applicable to CAFOs. In case of any conflict between the fact sheet and the General Permit, the terms of the General Permit govern.

The text of this fact sheet contains words and phrases in bold and italics. These words and phrases are the first usage in the fact sheet and are defined in Appendix B of this fact sheet.

PUBLIC PARTICIPATION

The procedures for the formulation of a final determination of permit issuance include:

PUBLIC COMMENT PERIOD

Ecology invites public comment on the proposed draft permit and fact sheet until 11:59 p.m. on Wednesday, August 17, 2022. Ecology welcomes all comments that address the permit requirements in the formal draft CAFO General Permits.

In order for Ecology to adequately address comments, please include the following information with each comment:

1. The specific permit language used in the requirement subject to your comment. Include the page number(s) and, where indicated, section reference (i.e., S8.E.7.a).
2. A brief, concise comment including the basis for the comment, and in particular the administrative, legal, technical, or other basis for the concern.
3. Suggested permit language or a conceptual alternative to address your concern.

Submit oral comments by attending and testifying at the public hearings. Send written comments to Ecology by either:

1. [eComments](#)² (preferred)
2. Mail

Washington State Department of Ecology
Water Quality Program
Attn: Chelsea Morris
PO Box 47696
Olympia, WA 98504-7696

PUBLIC HEARINGS AND WORKSHOPS

Ecology will host two public workshops and hearings on the proposed changes in the draft permits. The workshops provide Ecology an opportunity to explain the proposed changes and to answer questions. Each workshop will be immediately followed by a public hearing. The public hearings will provide an opportunity for the public to give formal comments on the draft permits or fact sheet.

Tuesday, July 26, 2022 – 10:00 AM

[Register for the Webinar](#)^{3*}

Call-in Only: 253-215-8782

Meeting ID: 863 0949 8365

Thursday, July 28, 2022 – 6:00 PM

[Register for the Webinar](#)^{4*}

Call-in Only: 253-215-8782

Meeting ID: 865 3217 2503

*The workshops and hearings offered via webinar allow individuals to view the presentation and provide testimony via computer or mobile device.

ISSUING THE FINAL PERMITS

Ecology will make a final permit issuance decision after it receives and considers all public comments. Ecology expects make an issuance decision on the final general permits by the end of 2022. Final permits will be effective one month after the issuance date.

² <https://wq.ecology.commentinput.com/comment/index?id=5gTtQ>

³ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Concentrated-animal-feeding-operation>

⁴ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Concentrated-animal-feeding-operation>

BACKGROUND

A general permit is designed to provide coverage for a group of related facilities or operations of a specific industry type or group of industries. Ecology issues general permits when the discharge characteristics are similar and a standard set of permit requirements can effectively provide environmental protection and comply with water quality standards for discharges to surface water or ground water. The CAFO General Permits are issued to operations that confine livestock for long periods of time in pens or barns and discharge pollutants to surface or groundwater. The permits require medium and large-scale livestock operations that discharge pollutants to implement specific management practices to protect water quality.

DESCRIPTION OF ANIMAL AGRICULTURE INDUSTRY

Commercial and/or industrial operations that produce animal and animal-based products may confine and feed substantial numbers of livestock and poultry in a small area. Typical animals raised in confinement include milk cows, beef, veal, pigs or hogs, chickens, turkeys, ducks, sheep, goats, and horses, but other animals may also be confined (e.g. mink). Animals are confined to barns, sheds, pens, cages, or other type of confinement depending on the type of animal. Confinement areas do not sustain vegetation, nor will they be available for cropping or forage. At times, the confined animals may be pastured or given access to outside spaces. Feed is supplied to the animals and waste materials are removed during confinement. The waste material includes animal feces and urine, feed waste, wash water, bedding material, contaminated rainwater, waste materials, and other processing waste waters generated by these facilities.

The waste material is collected and may be treated and stored before it is either land applied or transferred to a separate non-related entity for land application. The purpose of land application is to treat certain pollutants found in the waste material and to beneficially use the material to provide crop nutrients, improve soil quality, and supplement or replace the use of chemical fertilizers.

WASTEWATER CHARACTERIZATION

Manure and other waste material generated on CAFOs can pose substantial risks to the environment and public health if improperly managed. Manure and other waste materials can enter surface and ground waters during rain events, spills, infrastructure and equipment failures, or by the improper application of manure to fields. Potential water pollutants include nutrients such as nitrogen and phosphorus from feed or manure, pathogens from manure, turbidity from various operational practices, temperature from process water or lack of riparian vegetation, and chemical compounds ranging from metals (e.g. zinc, copper) and salts (e.g. sodium, chlorides, potassium) to organic chemicals in animal feed, cleaning agents, vaccines and anti-microbials, growth hormones, pesticides, and petroleum products.

Manure, which may be comingled with other waste material, is used by many CAFOs as fertilizer and soil amendments for growing crops. The use of manure as fertilizer may be in place of, or in addition to, commercial chemical fertilizers. Various techniques are used to **land apply** the material such as surface application through irrigation reels, sprinkler sets, or slurry trucks, and subsurface applications with disks, knives, or chisels.

Manure

Manure is a product generated by CAFO and as excreted, is primarily liquid. Portions of the manure stream that are less than 90% liquid may be handled as a solid material. Manures that are more than 90% liquid may be separated into liquid and solid fractions. Solid manure is stored in covered or open bunkers, on concrete and soil pads, or in place within poultry houses. Depending on the animal type, the solid manure is stored and composted until it is ready for use as animal bedding or a soil amendment. Liquid manure is stored in concrete or metal tanks, **waste storage ponds**, or pits until it is ready to for use as a fertilizer or soil amendment.

Treatment System Additives and Digestate

Some CAFOs utilize biological and chemical treatment systems to reduce pathogens and nutrients found in manure, capture biogas for energy production, manage odors, or reduce the net effect of greenhouse gas emissions. Depending on the design of the treatment system, additives may be used to increase treatment. The material remaining after treatment is often called digestate and may be land applied in the same manner as manure.

Even after treatment, digestate may contain high concentrations of nutrients and organic chemicals that pose a risk to water quality in the event of infrastructure and storage failures, or improper land application.

Process Wastewater and Chemical Compounds

A CAFO may generate other waste streams in addition to manure. Process wastewater may come from cleaning animals and infrastructure in the barns, pens, and milking parlor. Process wastewater also includes any water which comes into contact with any raw materials including manure, litter, feed, or bedding. Some CAFOs may also have on-site facilities to make animal-based products that generate wastewater from the production process. Process wastewaters are typically mixed with manure and/or litter and stored for later use as fertilizer.

Feed and feed additives are rich in nutrients thus, spilled feed or runoff mixed with feed has the potential to negatively impact water quality if not managed. Common feed types include alfalfa, corn silage, grasses, sorghum, and brewery wastes. CAFOs store animal feed that is turned into silage typically in covered bunkers, silos, or silage bags.

Many different types of cleaners are used by CAFOs to protect animal and human health. These cleaners may contain salts, metals, and organic chemicals that risk water quality. Cleaners often

used by CAFOs include germicidal detergents, foot dips, chlorinated liquid cleaners, acid cleaners.

CAFOs will also use vaccines, medications including antibiotics and antimicrobials, and hormones to maintain the health of livestock animals. Incidental release may occur where animals are fed or confined.

Bacteria and Other Pathogens

High *E.coli* and fecal coliform levels, which are an indicator for other bacteria and pathogens, come from many sources in a watershed including agriculture, septic systems, and wild animals and pets. During rain events, the fecal coliform are picked up by run-off and transported to water bodies and other water conveyances (e.g. stormwater drains) that eventually end up in lakes, rivers or marine waters. The presence of fecal coliform bacteria indicate that illness-causing viruses and bacteria may also be present, which can affect the public health, economy, and environmental quality of a community.

Manure contains many different types of bacteria, viruses and parasites (some of which are pathogenic to humans) in addition to the fecal coliform. They are naturally present in the intestines and excreta from animals. Determining if pathogens are present is challenging due to the wide variety that may be present. Fecal coliform are always present in animal wastes, and ease of testing make fecal coliform an indicator for determining the presence of pathogens from animals. Pathogens that may be present in manure, litter, and process wastewater (others may exist that are not included): *Campylobacter*, *Cryptosporidium*, *Escherichia coli* (*E. coli*), *E. coli* O157:H7, *Giardia*, *Leptospira*, *Listeria*, and *Salmonella*.

Fecal coliform are used to monitor the health of shellfish beds by the Washington State Department of Health Shellfish Program. High levels of fecal coliform in shellfish indicate the presence of other pathogens that are harmful to humans if eaten. This is especially important to the commercial shellfish industry, whose growers cannot sell harvested shellfish from beds with high fecal coliform levels. Large amounts of pathogens coming from a watershed, as indicated by the presence of high fecal coliform counts, can cause significant economic damage to shellfish growers.

Nitrogen & Phosphorus

Nitrogen and phosphorus are two of a few nutrients essential to life. Without them, plants would not grow. Yet, excessive amounts of these nutrients in surface and groundwaters lead to conditions that harm aquatic ecosystems, lower recreational opportunities, and pose a risk to human health. Both nitrogen and phosphorus exist in several forms that change as they pass from animal manure to soil to plants. Of importance in the manure-soil-plant system is organic nitrogen, ammonium (NH_4^+), nitrate (NO_3^-), nitrite (NO_2^-), organic phosphorus, and orthophosphates (H_2PO_4^- and HPO_4^{2-}).

Organic forms of nitrogen and phosphorus are not readily available to plants. In the manure-soil-plant system, organic matter must first be broken down by microorganisms (e.g. bacteria, fungi) before nitrogen and phosphorus can be taken up by a crop. The biological processes, sometimes collectively referred to as mineralization, depend on environmental factors such as moisture, temperature, and other nutrients available to the soil microorganisms.

Most of the time, plants use the inorganic forms of nitrogen and phosphorus-- ammonium, nitrate, and orthophosphates. These inorganic forms are soluble and can be driven out of the soil's root zone or a manure pile when rain or irrigation saturates the material.

When nitrate is driven out of the rooting zone it becomes less accessible to plants, fungi, and bacteria and it may reach groundwater drinking supplies. Groundwater is considered contaminated when nitrate concentrations are greater than 10 mg/L-- EPA's drinking water standard for nitrate (40 CFR 141). Nitrates pose health risks to vulnerable populations such as infants under six months old and pregnant adults. Infants who drink water with high nitrates may develop the serious health condition methemoglobinemia or blue baby syndrome. For information on nitrates in groundwater see [Washington Nitrate Prioritization Project](#)⁵. For health information, see Washington Department of Health's fact sheet on [Nitrate in Drinking Water](#)⁶.

When too much nitrogen or phosphorus enters surface waters (e.g. streams, rivers, lakes, and coastal waters), the nutrients act like fertilizer to trigger algal and aquatic plant growth. Excessive algae and aquatic plants can disrupt boating and swimming recreation, increase harmful algae blooms, and degrade habitat for other aquatic life. Toxic blue-green algae (cyanobacteria) can cause serious illness when people and animals are exposed. To find out more about Ecology's efforts, visit [our Freshwater Algae Control webpage](#)⁷.

When algae and aquatic plants die, their decomposition decreases the dissolved oxygen in a surface water. When lots of algae and plants die in the water, dissolved oxygen levels can drop dramatically, killing fish and other aquatic organisms. Lower oxygen in surface waters will change aquatic food webs. For more on the impact of nutrients on surface waters see Ecology's Visit Ecology's webpage on [reducing nutrients in Puget Sound](#)⁸.

There are at least two nitrogen gas forms related to manure collection, storage, and crop fertilization with environmental impacts. Manure and litter is rich in ammonium and when exposed to air, that ammonium converts or volatilizes, to ammonia gas, a respiratory irritant. The speed of conversion depends on atmospheric and environmental conditions such as air temperature, wind, and humidity.

⁵ <https://apps.ecology.wa.gov/publications/SummaryPages/1610011.html>

⁶ <https://doh.wa.gov/sites/default/files/legacy/Documents/Pubs/331-214.pdf>

⁷ <https://ecology.wa.gov/Water-Shorelines/Water-quality/Freshwater/Freshwater-algae-control>

⁸ <https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Helping-Puget-Sound/Reducing-Puget-Sound-nutrients>

Denitrifying bacteria in soil and manure piles convert nitrate to nitrous oxide gas. Like similar microbial processes that convert organic nitrogen to inorganic forms, the rate of nitrous oxide production depends on environmental factors such as soil temperature, wetness, and the amount of nitrate available. Nitrous oxide is a long-lasting greenhouse gas with a much greater heat-trapping ability than carbon dioxide. For an in depth explanation of nitrous oxide production in agricultural soil management, see Chapter 5 of EPA's most recent [Greenhouse Gas Inventory Report](#)⁹.

Contaminants of Emerging Concern

Historically, water quality regulation has focused on toxics and the priority pollutants Biological Oxygen Demand (BOD), temperature, pathogens, and nutrients. Contaminants of Emerging Concern (CECs) are contaminants, both natural and synthetic, that may cause ecological or human health impacts but may not be currently regulated. Examples of CECs on CAFOS include pharmaceuticals, antimicrobials, disinfection by-products, and microplastics.

Most livestock and poultry receive pharmaceuticals and antimicrobials to treat and prevent diseases and outbreaks. Pharmaceutical compounds may bioaccumulate in the aquatic environment and cause an array of impacts to aquatic life and human health such as reduced growth, increased mortality, reproduction abnormalities, or endocrine disruption. The impact is dependent on the compound and dose ingested by the target species. The use and overuse of antimicrobials can lead to antibiotic resistance, a concern for animal and humans health. Antimicrobials and antibiotic resistance bacteria and genes may be present in manure and manure-contaminated water.

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) are manufactured chemicals that are water soluble, highly mobile, and never disappear from the environment. At contaminated sites, food raised for human consumption could have elevated PFAS. Research studies documented in [Ecology's Chemical Action Plan for PFAS](#)¹⁰ have demonstrated that when perfluoroalkyl acids are present in soil, drinking water, irrigation water, or animal feed, they can transfer to livestock and food crops. Ecology is working with the Washington State Department of Health to identify sources and recommend actions to reduce the use, release, and exposure to PFAS in Washington. [US EPA is also taking action to address PFAS](#)¹¹, including proposing draft aquatic life criteria for PFOA/PFOS in surface waters. For more information on PFAS, see [Ecology's Chemical Action Plan for PFAS](#)¹².

⁹ <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

¹⁰ <https://ecology.wa.gov/Waste-Toxics/Reducing-toxic-chemicals/Addressing-priority-toxic-chemicals/PFAS>

¹¹ <https://www.epa.gov/pfas/epa-actions-address-pfas>

¹² <https://ecology.wa.gov/Waste-Toxics/Reducing-toxic-chemicals/Addressing-priority-toxic-chemicals/PFAS>

REGULATORY AUTHORITY AND MAJOR CASE LAW

This review is not intended to be exhaustive. It provides a broad overview of the laws and rules under which Ecology has authority to regulate discharges to *waters of the state*.

The Federal Clean Water Act (CWA) 33 U.S.C. §1251 et seq.

The federal CWA, as amended, establishes water quality goals for navigable surface waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the NPDES system of permits, which the United States Environmental Protection Agency (EPA) administers. The EPA has delegated responsibility and authority to administer the NPDES permit program to the State of Washington. In addition to this delegation under the CWA, the state legislature in Revised Code of Washington 90.48 defines Ecology's authority and obligations in administering the NPDES permit program. RCW 90.48.260. Ecology directly implements the Code of Federal Regulations (CFRs) when developing state NPDES permits. Ecology does not have the authority to issue NPDES permits to CAFOs that are federal or tribal facilities (with the exception of some limited areas on Puyallup tribal land).

Chapter 90.48 RCW - The State Water Pollution Control Act

Chapter 90.48 RCW declares that maintaining the highest possible standards to insure purity of all waters of the state is the policy of the State. Healthy water quality must be maintained for public health, public enjoyment, protection of terrestrial and aquatic life, and the industrial development of the state. All known, available, and reasonable methods must be used by industries and others to prevent and control pollution.

In addition, it is unlawful for any person to discharge pollutants to waters of the state (RCW 90.48.080). The only time a discharge is lawful is when a permit to discharge is obtained from Ecology prior to the discharge occurring (RCW 90.48.160).

Chapter 173-226 WAC - Waste Discharge General Permit Program

The purpose of chapter 173-226 WAC is to establish a state general permit program for the discharge of pollutants to waters of the state under the authority granted to Ecology in RCW 90.48. Permits issued under chapter 173-226 WAC may be state waste discharge general permits or combined NPDES and state waste discharge general permits.

Chapter 173-200 WAC - Water Quality Standards for Groundwaters and Chapter 173-201A - WAC Water Quality Standards for Surface Waters

The *water quality standards* for the state of Washington determine *beneficial uses* of waters of the state. Any permits issued must include *effluent limitations* so that allowed discharges meet the water quality standards, including antidegradation.

Concerned Area Residents for the Environment v. Southview Farm, 35 F.3d 114 (2nd Cir. 1994)

Concerned Area Residents for The Environment brought a citizen suit under the CWA against Southview Farm for the discharge of manure without a permit from a CAFO to surface water on five occasions. The Court held:

1. Manure spreading vehicles are *point sources*.
2. A facility is a CAFO, and a point source, if it confines animals for 45 days or more in any 12-month period, and crops, vegetation forage growth, or post-harvest residues are not sustained over the normal growing season on any portion of the area where the animals are confined. Growing crops or forage on another portion of a facility that does not contain confined animals does not change the facilities status from being a CAFO.
3. *Agricultural stormwater* exemption only applies to the discharge of pollutants caused by precipitation, not discharges that occur during precipitation due to other activities.

CARE v. Henry Bosma Dairy, 305 F.3d 943 (9th Cir. 2002)

The Community Association for Restoration of the Environment (CARE) brought a CWA citizen suit against the Henry Bosma Dairy for discharges in violation of its NPDES permit. The Court held that fields where manure is stored and ditches that store or transfer manure, and manure spreading vehicles are part of the CAFO, and therefore part of the point source that makes up a CAFO.

Waterkeeper Alliance, Inc v. EPA, 399F.3d 486 (2nd Cir. 2005)

EPA revised and updated the CAFO regulations in 2001 and issued the final rule in 2003. Several aspects of the 2003 CAFO rule were challenged by the Waterkeeper Alliance. The court vacated three portions of the 2003 CAFO rule. Permitting authorities may no longer:

1. Issue permits without reviewing the terms of the nutrient management plans (NMP),

2. Issue permits that do not include the terms of the NMP as permit terms and provide for public participation (public comment) on the NMP,
3. Require CAFOs to apply for an NPDES permit based on the potential to discharge or otherwise demonstrate that they have no potential to discharge.

National Pork Producers Council, v. EPA: 635 F.3d 738 (5th Cir. 2011)

The NPPC appealed provisions of the 2008 federal CAFO rule (which applies only to surface water). The court held that EPA cannot impose a duty for a CAFO to apply for a permit unless the CAFO is actually discharging (or has discharged), vacating any duty to apply for a CAFO that only “proposes to discharge.” That portion of the 2008 CAFO rule was vacated. CAFOs are only required to apply for a permit if a discharge occurs.

Wash. State Dairy Fed'n v. Dep't of Ecology, 18 Wn. App. 2d 259, 490 P.3d 290 (2021)

Environmental groups and industry groups sought review of the State Pollution Control Hearings Board decision to mostly approved the conditions in the Concentrated Animal Feeding Operation National Pollution Discharge and Elimination System and State Waste Discharge General Permits (permits) issued by Washington State Department of Ecology in 2017. The Court held that:

1. The permits met all known, available, and reasonable methods of prevention, control, and treatment for animal pens and corrals, but not manure lagoons or composting areas.
2. Soil sampling and visual inspections alone were insufficient to ensure compliance in all cases.
3. The Manure Pollution Prevention Plan did not provide the public with the opportunity for review and comment as required by federal regulation.
4. Ecology did not consider the effects of climate change before issuing the permits.
5. The cumulative air temperature standard T-SUM 200 satisfied AKART for Eastern Washington.

LEGAL AND TECHNICAL GROUNDS FOR PERMIT CONDITIONS

The CWA defines “effluent limitation” as any restriction on the quantity, rate, and concentration of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance (33 USC § 1362(11)). Effluent limitations are among the permit conditions and limitations prescribed in NPDES permits issued under Section 402(a) of the CWA (33 USC §1342(a)). Delegated states such as Washington, must meet, at a minimum, the requirements for effluent limits set by EPA; however, they have the option of adopting more stringent requirements.

Effluent limitations in NPDES permits may be expressed as numeric or non-numeric standards. Under EPA’s regulations, non-numeric effluent limits are authorized in lieu of numeric limits, where “[n]umeric effluent limitations are infeasible” 40 CFR 122.44(k)(3). As far back as 1977, courts have recognized that there are circumstances when numeric effluent limitations are infeasible and have held that EPA may issue permits with conditions (e.g., Best Management Practices or “BMPs”) designed to reduce the level of effluent discharges to acceptable levels (Natural Res. Def. Council, Inc. v. Costle, 568 F.2d 1369 (D.C. Cir.1977)).¹³

Through the Agency’s NPDES permit regulations, EPA interpreted the CWA to allow BMPs to take the place of numeric effluent limitations under certain circumstances. 40 C.F.R. §122.44(k), entitled “Establishing limitations, standards, and other permit conditions (applicable to State NPDES programs),” provides that permits may include BMPs to control or abate the discharge of pollutants when: (1) “[a]uthorized under section 402(p) of the CWA for the control of stormwater discharges”; or (2) “[n]umeric effluent limitations are infeasible.” 40 C.F.R. § 122.44(k).

The U.S. Court of Appeals for the Sixth Circuit has held that the CWA does not require the EPA to set numeric limits where such limits are infeasible in *Citizens Coal Council v. United States Environmental Protection Agency*, 447 F.3d 879, 895-96 (6th Cir. 2006). The *Citizens Coal* court cited to *Waterkeeper Alliance, Inc. v. EPA*, 399 F.3d 486, 502 (2d Cir. 2005), stating “sitespecific BMPs are effluent limitations under the CWA.” “In sum, the EPA’s inclusion of numeric and non-numeric limitations in the guideline for the coal remining subcategory was a reasonable exercise of its authority under the CWA.”

Technology-Based and Water Quality-Based Effluent Limitations

¹³ Where EPA has not issued effluent guidelines for an industry, EPA and State permitting authorities establish effluent limitations for NPDES permits on a case-by-case basis based on their best professional judgment. See 33 U.S.C. § 1342(a)(1); 40 C.F.R. § 125.3(c)(2).

Federal and state regulations require that discharges from existing facilities, at a minimum, meet technology-based effluent limitations reflecting, among other things, the technological capability of Permittees to control pollutants in their discharges that are economically achievable. Specifically, state laws (RCW 90.48.010, 90.52.040 and 90.54.020) require the use of “all known, available and reasonable methods of prevention, control and treatment” (AKART).

Technology-based effluent limitations are in many cases established by EPA in regulations known as effluent limitations guidelines. EPA establishes these regulations for specific industry categories or subcategories after conducting an in-depth analysis of that industry. The ELGs for CAFOs are at 40 CFR 412.

Water quality-based effluent limitations are required by CWA Section 301(b)(1)(C) and in Washington State, are based on compliance with state Surface Water Quality Standards (WAC 173-201A), Groundwater Quality Standards (WAC 173-200), Sediment Quality Standards (WAC 173-204), or the Federal water quality criteria applicable to Washington (40 CFR 131.45).

Between the two types of limits, technology or water quality-based, the most stringent must be chosen for each of the pollutants of concern, and implemented through NPDES permits. (CWA sections 301(a) and (b)).

This permit uses technology-based effluent limitations. Numeric effluent limitations are not feasible for discharges from CAFOs, so Ecology has chosen to use narrative effluent limits. Discharges to surface waters are generally prohibited. When they occur, discharges may be intermittent in flow rate, volume, and levels of pollution. Discharges to groundwater are also dependent on facility design and management, cropping methods, and the local environmental conditions including site specific hydrogeology. Water quality standards for surface water, groundwater, and drinking water serve as limits. Discharges may not cause or contribute to an excursion above these limits.

Meeting Technology-based Effluent Limitations

Federal regulations at 40 CFR 123.36 require state permitting authorities to develop technical standards for nutrient management by CAFOs in their state. The technical standards must be consistent with CAFO effluent limitations guidelines at 40 CFR 412. The technical standards developed by the state must, at minimum, be consistent with the requirements for land application of waste at 40 CFR 412.4(c)(2). To protect water quality, Ecology has included standards for more than just land application of waste in the permit.

State laws (RCW 90.48, 90.52 and 90.54) require the use of ***all known, available, and reasonable methods of prevention, control, and treatment (AKART)*** by commercial and industrial operations to prevent and control the pollution of the waters of the state of Washington. AKART is a technology-based approach to limiting pollutants in discharges the same as BPT, BCT, and BAT. Ecology determined that implementing the technical standards included as permit requirements meet AKART and 40 CFR 123.36. The technical standards

developed by Ecology are included in the permit special conditions and are discussed in the specific condition, or conditions, where implemented.

These requirements are the technical standards that Ecology developed to comply with 40 CFR 123.36 (see the fact sheet sections above).

As part of the application, facilities seeking coverage under the CAFO general permits must prepare a Manure Pollution Prevention Plan (MPPP) that meets the requirements for a Nutrient Management Plan (NMP) found in the EPA CAFO rule. The EPA CAFO rule requires nine minimum practices in the NMP (40 CFR 122.42(e)) and additional requirements, such as depth gauge for liquid waste storage facilities and record keeping (40 CFR 412).

1. Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities.
2. 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.
3. Ensure that clean water is diverted, as appropriate, from the production area.
4. Prevent direct contact of confined animals with waters of the United States.
5. 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.
6. 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 United States.
7. Identify protocols for appropriate testing of manure, litter, process wastewater, and soil.
8. 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.
9. Identify specific records that will be maintained to document the implementation and management of the minimum elements described in paragraphs (e)(1)(i) through (e)(1)(viii) of this section.

Ecology was prescriptive in writing the technology-based narrative effluent limitations in this permit to make it clear what Ecology requires in a facility's MPPP. As part of that simplification, in the land application permit condition, Ecology chose the narrative approach to develop a plan. 40 CFR 122.42(e)(5)(i) and (ii) define two approaches to developing a NMP, linear and narrative. In the linear approach, effluent limitations are the rates of application of waste expressed as lbs/N or lbs/P. The narrative approach sets effluent limitations as the process by which a facility calculates its waste application rates in lbs/N or lbs/P.

The draft permit requires that the maximum amount of nutrients that can be applied to a crop be no more than the difference between the nitrogen inputs and outputs as recorded in a field nutrient budget worksheet. This maximum amount of needed nutrients is a technology-based effluent limitation. The Permittee may not exceed this amount for the year.

Meeting Surface Water Quality Standards

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-510 states that waste discharge permits shall be conditioned such that the discharges authorized will meet the water quality standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

Numeric water quality criteria at WAC 173-201A specify the levels of pollutants allowed in receiving water to protect drinking water uses, human health, aquatic life, and recreation in and on the water. The standards may be more restrictive if a waterbody has been identified as being polluted (303(d) listed) or if it has had a Total Maximum Daily Load (TMDL) completed for the watershed. EPA has published 91 numeric water quality criteria for the protection of human health that are applicable to dischargers in Washington State (40 CFR 131.36). These criteria protect people from exposure to pollutants linked to cancer and other diseases, based on consuming fish and shellfish and drinking contaminated surface waters.

Narrative water quality criteria at WAC 173-201A-260 limit toxic, radioactive, or other deleterious material concentrations below those that have the potential to adversely affect designated water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health.

Ecology considered the numerical and narrative criteria when it evaluates the characteristics of the wastewater and when it implements all known, available, and reasonable methods of prevention, control, and treatment (AKART) as described above in the technology-based limits section. Permittees are required to apply AKART, including the preparation and implementation of an adequate Manuare Pollution Prevention Plan, and the installation and maintenance of BMPs in accordance with the Plan and the terms and conditions of this permit. Ecology has determined that Permittees in full compliance with the CAFO General Permits meet the state AKART requirements in Chapter 90.48 RCW. When Ecology determines if a facility is meeting AKART it considers the pollutants in the wastewater and the adequacy of the treatment to prevent the violation of narrative criteria.

Meeting Sediment Management Standards

The sediment management standards (**WAC 173-204**) protect aquatic biota and human health. Under these standards, Ecology may require a Permittee to evaluate the potential for the discharge to cause a violation of sediment standards (**WAC 173-204-400**).

Meeting Groundwater Quality Standards

Similar to the Surface Water Quality Standards discussed above, the Groundwater Quality Standards (**WAC 173-200**) protect existing and future beneficial uses of groundwater. Permits issued by Ecology must not allow violations of those standards and that all pollutants proposed for entry into groundwater are provided with AKART treatment prior to entry.

Source control and treatment BMPs can eliminate or minimize the contamination of groundwater from CAFO wastewater. However, if Ecology determines that BMPs are ineffective in protecting groundwater quality, Ecology may require the Permittee to implement additional measures to protect groundwater quality or to apply for an individual permit. The permits contain requirements for deep soil monitoring or groundwater monitoring in response to site-specific conditions. The technology and water quality based effluent limitations in the permit ensure that discharges do not cause or contribute to violation of the groundwater quality standards.

Antidegradation

Federal regulations (40 CFR 131.12), the Water Quality Standards for Surface Waters of the State of Washington (**WAC 173-201A-300, 310, 320, 330**) and Water Quality Standards for Groundwaters of the State of Washington (**WAC 173-200**) establish a water quality antidegradation policy. This section applies only to the combined permit as the state permit does not authorize surface water discharges.

This program establishes three tiers of protection for surface water quality. These three tiers function to 1) protect existing and designated in-stream uses, 2) limit the conditions under which water of a quality higher than the state standards can be degraded, and 3) provide a means to set the very best waters of the state aside from future sources of degradation entirely. **WAC 173-201A-320** contains the Tier 2 antidegradation provisions for the state's surface water quality standards.

Washington's Antidegradation Policy also establishes protection for groundwater quality, but it does not require a Tier 2 analysis as the Surface Water Quality Standards do. For groundwater, existing and future beneficial uses must be maintained and protected against degradation that would prevent or interfere with the use of groundwater for a beneficial use. Degradation of groundwater is not allowed in national or state parks, wildlife refuges, or waters of exceptional recreational or ecological existence. If the groundwater is of better quality than the criteria assigned to the waters, the better quality waters must be protected against degradation to the existing background quality. The exception to the better quality water protection is if there is

an overriding public benefit, and any pollutants allowed into better quality waters is provided with AKART.

A Tier 2 analysis is required when new or expanded actions are expected to cause a measurable change in the quality of a receiving water that is of a higher quality than the criterion designated for that waterbody in the water quality standards (WAC 173-201A-320(1)). WAC 173-201A-320(3) defines a measurable change as specific reductions in water quality, and defines “new or expanded actions” as “human actions that occur or are regulated for the first time, or human actions expanded such that they result in an increase in pollution, after July 1, 2003.” This definition includes facilities that first began to discharge waste, or increased the discharge of waste, after July 1, 2003. The definition also applies to those facilities that discharged waste prior to July 1, 2003, but were regulated by Ecology for the first time after July 1, 2003. All **applicants** for coverage under the CAFO permit have “the potential to cause a measurable change in the physical, chemical, or biological quality of a waterbody” and meet the definition of a “new or expanded action.” Therefore, Ecology has prepared this Antidegradation Plan during the development process to comply with the Tier 2 antidegradation rule (WAC 173-201A-320).

WAC 173-201A-320(6) states that “the antidegradation requirements of this section can be considered met for general permits and programs that have a formal process to select, develop, adopt, and refine control practices for protecting water quality and meeting the intent of this WAC section. This adaptive process must:

1. Ensure that information is developed and used expeditiously to revise permit or program requirements.
2. Review and refine management and control programs in cycles not to exceed five years or the period of permit reissuance.
3. Include a plan that describes how information will be obtained and used to ensure full compliance with this chapter. The plan must be developed and documented in advance of permit or program approval under this section.

Antidegradation Analysis and Plan

Ecology prepared the Tier 2 antidegradation plan even though implementation of the permit requirements lead CAFOs to eliminate discharges during their normal operations. Not discharging is the best way to prevent degradation of water quality. The water quality standards at WAC 173-201A-320(6) describe how Ecology should conduct an antidegradation Tier II analysis when it issues NPDES general permits. In preparing the draft permits, Ecology met the requirements of each section:

1. Use the information collected, from implementation of the permit, to revise the permit or program requirements.

- Ecology revised the proposed permit based on written and verbal feedback from permittees, parties affected by the permit, internal staff, and government agencies about what was working well and what was not. Ecology also maintained notes about comments received over the life of the permit and used these for reference when developing the proposed permit. Ecology will further revise the draft permit based on a formal public comment period (6 weeks) and testimony received at two planned public hearings.
 - Ecology reviewed technical literature and consulted staff experts in pollution control and monitoring.
2. Review and refine management and control programs in cycles not to exceed five years or the period of permit reissuance.
 - Ecology was on track to meet the five-year reissuance cycle for the CAFO permit. In June 2021, when the Washington Court of Appeals issued their decision on the appeal of the current permit, Ecology revised the reissuance schedule. Between July 2021 and today, Ecology worked to align the permits with the Court's decision. The current permits issued in 2017 expired in March 2022. Ecology plans to reissue them by the end of 2022. Permit reissuance includes a public involvement process as described in Appendix C.
 - Ecology will spend about two and a half years soliciting input from users and affected parties, rewriting and revising permit conditions, and reviewing relevant data before going out for public comment on the permit and accompanying documents and finalizing the proposed new version of the permit.
 3. Include a plan that describes how Ecology will obtain and use information to ensure full compliance with water quality standards. Ecology must develop and document the plan in advance of permit or program approval.
 - The information in this factsheet and in the antidegradation section of this factsheet constitute Ecology's antidegradation plan for the CAFO General Permit.
 - Ecology prohibits the further impairment of 303(d)-listed waterbodies in this proposed permit. The conditionally authorized discharges must not contain the pollutant or pollutants for which the waterbody is listed as impaired. Where a waterbody has an approved Total Maximum Daily Load (TMDL), the discharges conditionally authorized by this permit must not exceed wasteload established in the TMDL. Where no wasteload was allocated for the permitted facility, any authorized discharged must not contain the pollutant or pollutants for which the waterbody is listed as impaired.

Meeting Beneficial Use Definition

Federal and State solid waste regulations, in the Resource Conservation and Recovery Act (RCRA 42 U.S.C. §§ 6901-6992k) and the state Solid Waste Management statute (RCW 70A.205), concern discarded materials. Agricultural wastes, including manure, are not discarded materials when returned to the soil as fertilizer.

The manure land applied by a CAFO in compliance with the CAFO General Permits does not meet the definition of a discarded material or solid waste under RCRA. This is because land applied manure is a nutrient source (fertilizer) for crop growth, and is therefore put to beneficial use and not discarded. Permit conditions that limit the use of manure to its beneficial use include, but are not limited to:

- Developing a field-specific nutrient budget every year (condition S4.J.1)
- Applying only the amount of nutrients estimated in the budget (condition S4.J.3.a)
- Restricting applications during high risk of transport periods (condition S4.J.3.d)

If a permitted CAFO treats the manure as discarded material (e.g., applies manure that exceeds normal agronomic rates), then the operation is in violation of the terms of the CAFO General Permits. If land application becomes disposal, then a solid waste handling permit is required. However, that permit would not allow for an application of manure beyond the agronomic need of the crop.

As directed by RCW 70A.205.025, Ecology adopts standards for solid waste facilities, while local jurisdictional health departments (county, regional, or local health departments or districts) have primary oversight of solid waste facilities and issue permits and enforce the standards. As allowed by RCW 70A.205.275, the local health departments may defer to another permit like the State Waste Discharge permit if it provides a comparable level of protection as a solid waste handling permit.

SEPA COMPLIANCE

Ecology's Duty to Comply

State law exempts the issuance, reissuance, or modification of any wastewater discharge permit from the State Environmental Policy Act (SEPA) process as long as the permit contains conditions that are no less stringent than federal and state rules and regulations (RCW 43.21C.0383 and WAC 197-11-855). This proposed reissued general permit does not (a) Add to the covered area, which is the entire State of Washington; (b) Add to the type of facilities that must be covered; (c) Allow the discharge of additional pollutants; and (d) Contain conditions less stringent than the applicable federal and state rules and regulations.

This is a reissuance of existing general permits. The draft permits are at least as stringent as the version of the permits which expired in March 2022. However, Ecology did not file the initial SEPA documents from the first issuance of the general permit in 2000. As part of this reissuance, Ecology prepared a SEPA checklist for the authorized discharges associated with manure, litter, process wastewater, and other organic by-product from CAFO production areas and land application fields. We determined that the proposed draft permits will not have a probable significant adverse impact on the environment. The checklist and determination of non-significance can be found at the [Statewide SEPA Register](#)¹⁴.

Permittee's Duty to Comply

New operations must demonstrate compliance with the State Environmental Policy Act (SEPA, Chapter 43.21C RCW) before Ecology can authorize permit coverage. A modification of permit coverage for physical alterations, modifications, or additions to the CAFO operations also requires certification of SEPA compliance, if it results in an increase in volume of wastes or change in character of effluent is requested over that previously authorized. WAC 173-226-200(3)f(II).

Reduce and Prepare for Climate Impacts

Ecology is preparing for the future by understanding and reducing the effects of climate change. Through several efforts we will reduce greenhouse gas emissions and prevent and remediate negative impacts.

In 2021, the Washington Legislature passed the [Climate Commitment Act](#)¹⁵ (or CCA) which establishes a comprehensive program to reduce carbon pollution and achieve the greenhouse gas limits set in state law. The Climate Commitment Act (CCA) caps and reduces greenhouse gas emissions from the state's largest emitting sources and industries. CAFOs are not required to

¹⁴ <https://apps.ecology.wa.gov/separ/Main/SEPA/Search.aspx>

¹⁵ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.65>

report emissions - the legislative omitted manure management from reporting under the CCA. Facilities that are required to report their emissions will receive caps. They can trade emissions with others or conduct/fund offset actions outside of the program that result in GHG reductions. This may be the most common place where CAFOs participate in the CCA. In addition to the cap and invest program, the CCA expands [air quality monitoring](#)¹⁶ in overburdened communities. Ecology is currently in the process of developing criteria for identifying overburdened communities. We will be publishing a draft for public comment summer 2022.

Ecology publishes an inventory of Washington's greenhouse gases every two years, measuring the state's progress in reducing greenhouse gases compared to a 1990 baseline. This inventory helps us design policies to reduce greenhouse gas emissions and track progress toward meeting the state's reduction limits. The most recent inventory was published in Jan 2021 for the emissions period 1990-2018 (publication 20-02-020). In this most recent report, agricultural activities such as manure management, fertilizer use, and livestock digestion processes (enteric fermentation) result in methane and nitrous oxide emissions. In 2018, these agricultural emissions accounted for about 6.7 percent of Washington's total greenhouse gas emissions. In this emissions report, manure management refers to the collection and storage of manure. It does not include applying the manure to land as fertilizer.

Agriculture, in general, has an opportunity to play a significant role in reducing the climate warming gas nitrous oxide. According to EPA's most recent GHG inventory report published in April 2022, the agricultural sector as a whole contributes 9.9% to the US GHG emissions. Of that 9.9%, most (74.2%) is nitrous oxide. This potent greenhouse gas comes from fertilizer application and increased nitrogen availability in the soil. One key goal of the CAFO general permits is to ensure manure is applied to soils where plants will utilize the nutrients and the build up of nitrogen is prevented. Prohibiting nutrient applications when the field is saturated means less nitrogen is available to denitrifying soil bacteria at times when they're most likely to produce nitrous oxide. For an in depth explanation of nitrous oxide production in agricultural soil management, see Chapter 5 of EPA's most recent [Greenhouse Gas Inventory Report](#)¹⁷.

Methane is emitted when waste is stored in anaerobic conditions. Many facilities choose to compost rather than stockpile solid manures. Composting introduces oxygen and therefore reduces the amount of methane produced. In addition to the environmental benefits, composted manure is a better fertilizer source for crops than uncomposted solid manure. Methane is also a by-product of enteric fermentation and makes up the largest fraction of methane emissions in agriculture. Ecology supports the use of approaches to reduce enteric fermentation, but it is outside the scope of this permit - instead we focus on manure management.

¹⁶ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Air-quality-monitoring-network>

¹⁷ <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

DISCLOSURE OF BUSINESS INFORMATION

By law, information that is required to be submitted to Ecology by a permit is available to the public. This is necessary because it allows the public to determine if a facility is in compliance with its permit. Certain exceptions apply.

RCWs 42.56.610 and 90.64.190 require that certain information for dairies, feedlots, AFOs, and CAFOs not subject to or applying for permit be kept only be released in ranges. Once a facility obtains permit coverage under the state permit or combined permit, this exemption from release of records no longer applies to that facility. For a facility under the combined permit, all records and information must be released. For a facility under the state permit, in response to a public disclosure request, the information specified in RCW's 42.56.610 and 90.64.190 is to be released in the ranges identified in WAC 16-06-210. The information these requirement affect includes:

- Number of animals.
- Volume of livestock nutrients (manure) generated.
- Number of acres used for land application (of manure).
- Amount of livestock nutrients transferred to other persons.
- Crop yields.

Other information is exempt from disclosure under RCW 42.56.380. This information is generally business-related such as import/export, veterinary, sales, or other financial information. Unless related to facility effluent, neither the state permit nor combined permit ask for this type of information.

Confidential Business Information

Confidential business information may be requested for certain types of information under RCW 43.21A.160. Confidentiality does not extend to discharges or to information which would be detrimental to the public interest if withheld.

The information gathered as part of the state permit and combined permit is necessary to determine compliance with permit conditions. It is also related to the management of the effluent (manure, litter, process wastewater) generated by a facility covered by permit. Withholding such information would be detrimental to the public interest. Because of this, the information required to be submitted to Ecology by either the permit or the permit application is not confidential business information.

ECONOMIC IMPACT ANALYSIS

Ecology's State Waste Discharge General Permit Program rule (WAC 173-226-120) requires an economic impact analysis (EIA) of any draft wastewater general permit intended to directly cover small businesses. The analysis is required to serve the following purposes:

- A brief description of the compliance requirements of the draft general permit.
- The estimated costs for complying with the permit, based on existing data for facilities to be covered under the general permit.
- A comparison, to the greatest extent possible, of the cost of compliance for small businesses with the cost of compliance for the largest ten percent of the facilities to be covered under the general permit.
- A discussion of what mitigation the permit provides to reduce the effect on small businesses (if a disproportionate impact is expected), without compromising the mandated intent of the permit.

RCW 19.85.020(4) defines a small business as any business entity, including a sole proprietorship, corporation, partnership, or other legal entity, that is owned and operated independently from all other businesses, and that has fifty or fewer employees.

The 2017 EIA determined the general permit had a disproportionate impact on small business. To mitigate the burden on the smallest businesses (small CAFOs), Ecology included a lower threshold for CAFOs that require a permit. Only when Ecology determine a small CAFO is a significant contributor of pollutants will the small business be required to get a permit.

The 2022 EIA again determined the general permit has a disproportionate impact on small business, but there were no opportunities for mitigation. The conditions in the permit are intended to help CAFOs meet legal requirements that protect the state's surface and ground waters from unpermitted discharges and contamination (chapter 90.48 RCW, chapter 173-201A WAC, chapter 173-200 WAC).

SPECIAL CONDITIONS

S1 PERMIT COVERAGE

The draft CAFO permits are statewide permits that provide coverage for discharges associated with operations that confine and feed animals within the State of Washington. A facility is a CAFO, and a point source, if it confines animals for 45 days or more in any 12-month period, and crops, vegetation forage growth, or post-harvest residues are not sustained over the normal growing season on any portion of the area where the animals are confined. Growing crops or forage on another portion of a facility that does not contain confined animals does not change the facilities status from being a CAFO.

Ecology has chosen to use herd size to distinguish which facilities are required to obtain a permit. Medium and Large CAFOs that discharge to waters of the state are required to obtain a permit. Small facilities that discharge pollutants to waters of the state are assessed using factors from Federal CAFO regulations (40 CFR 122.23(c)(2)) that determine if the facility is a significant contributor of pollutants (SCOP) to surface water or groundwater. If Ecology's determination concludes that the facility is a SCOP, Ecology notifies them of the need to obtain coverage via technical assistance letter. Table 2 in the permit lists the size threshold for small CAFOs by animal type. Details on who must apply for permit coverage is in the next section, S2 Permit Administration.

A. Facilities Required to Seek Coverage under This General Permit

This condition specifies who is required to apply for permit coverage and when. Facilities defined as a medium or large CAFO that discharge to surface or groundwaters are required to apply for permit coverage. Medium and large CAFOs are defined by animal herd size in Table 2 in the permits. Ecology conducts a significant contributor of pollutants analysis before requiring small CAFOs to apply for permit coverage, on a case by case basis. Facility operators or owners in charge of CAFO operations are the person(s) required to apply for permit coverage.

Section 402 of the CWA (33 USC § 1251) requires that a NPDES permit be issued for the discharge of pollutants surface waters. Discharges to surface waters, even if the facility is otherwise constructed and operated as specified in 40 CFR § 412, require the owner or operator of the facility to apply for coverage under the combined CAFO permit.

RCW 90.48.160 requires a commercial or industrial operation of any type which results in the disposal of solid or liquid waste material into the waters of the state (surface or ground), to procure a permit prior to discharge. For purposes of this code, CAFO production areas, waste storage facilities, and land application fields are commercials and industrial operations.

The following sections present special discharge cases that Ecology has found need greater discussion and clarification.

Surface Water Discharges from Land Application Fields

Discharges to surface water from land application fields requires the owner or operator of a facility to apply for coverage under the combined permit. The federal CWA exempts certain precipitation-related discharges from needing an NPDES permit; however, state law at RCW 90.48 does not include the same exemptions, requiring a permit for any commercial or industrial operation discharging solid or liquid waste to waters of the state. In implementing the permits, Ecology and WSDA found most discharges from land application fields were the result of poor management decisions and caused an exceedance of water quality criteria. Ecology cautions operators that the federal exemption that applies only under specific conditions to facilities covered by the federal permit is a limited exemption and CAFOs are still prohibited from discharging to surface waters under RCW 90.48.080.

The federal CWA exempts agricultural stormwater from the definition of a point source discharge of pollution. In federal CAFO rules, agricultural stormwater is defined as : “Where manure, litter or process wastewater has been applied in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater, as specified in 40 CFR 122.42(e)(1)(vi-ix), a precipitation related discharge or manure, litter, or process wastewater from land areas under the control of a CAFO is an agricultural stormwater discharge” (40 CFR § 122.23(e)).

If all the following are true, then a precipitation related surface water discharge from a land application field is agricultural stormwater and does not violate a NPDES permit (combined permit):

1. The discharge was generated by precipitation,
2. The discharge was not from the production area,
3. The discharge was not caused by human activities (e.g. land application, irrigation) even if the activity took place during precipitation, and
4. The CAFO was operating in accordance with their site-specific nutrient management plan and maintains records demonstrating compliance.

State waste discharge permit rules excludes irrigation return flows, but not agricultural stormwater, in the definition of point source (WAC 173-226-030). Further, State law regarding nutrient management on dairies (90.64.010 RCW) considers a dairy in violation unless a dairy producer “has complied with all of the elements of a dairy nutrient management plan that: Prevents the discharge of pollutants to waters of the state, is commensurate with the dairy producer's current herd size, and is approved and certified under RCW 90.64.026.” Not all violations of 90.64 RCW will be discharges to waters of the state, but if a dairy’s violation includes a discharge, the operators or owner will be required to apply for permit coverage. Further, discharges of waste materials from the production area, whether caused by

environmental conditions or human activities, require the owner or operator of the facility to apply for coverage under the combined permit.

In the case of agricultural stormwater on unpermitted CAFOs, State law is more stringent than the Federal rule. Thus, all stormwater discharges of waste material from an unpermitted CAFO in Washington are a violation of RCW 90.48. A discharge that meets the definition of agricultural stormwater, however, does not automatically trigger a requirement to apply for combined permit coverage.

Groundwater Discharges from Waste Storage Structures

Liquid waste storage on CAFOs has the potential to impact groundwater if the containment structure is not properly designed or maintained. In developing the previous permit, Ecology established three cases where waste storage structures are not considered discharges to groundwater requiring a permit. An owner or operator of a CAFO is not required to apply for coverage under these permits if the waste storage structure is:

- a. Not discharging to groundwater, or
- b. Constructed with a double-layer synthetic liner with a leak detection and capture system between the liner layers, or
- c. An above-ground structure constructed of concrete or steel.

Ecology identified these three cases because waste storage ponds or manure lagoons all have a seepage rate based upon the structure's permeability. The amount and quality of the liquid waste escaping the storage pond is dependent on the engineering properties of the materials used to construct the storage pond, as well as the continual operation and maintenance of the structure.

Several waste storage structures, such as those with two layer synthetic liners, leak detection and a capture system between the layers, synthetic liner over clay (GCL), steel or concrete lining will have a very low seepage rate. Given the low risk, Ecology's Water Quality Program has determined that a waste storage pond with a two layer synthetic liner with leak detection and capture between the layers is not required to obtain a permit for groundwater discharge. The other liner types listed (concrete or steel) are low risk structures that when in good condition are not expected to seep or discharge pollutants to groundwater.

In developing the previous permit, Ecology identified a number of risk factors that if present, would lead Ecology to believe based on a predominance of the evidence that a waste storage pond is discharging to groundwater. If the risk factors are present based on the facility owner or operators assessment (or their technical service provider), they have a discharge to groundwater and must apply for coverage under the state permit.

There are two sets of risk factors to consider when determining if, based on a predominance of the evidence if a waste storage pond is discharging to groundwater. These risk categories are the seepage from the pond itself, i.e. the quantity of seepage, and the time of travel to

groundwater. Preferential flow paths (such as cracks in clay pond liners due to repeated dry/wet cycles) are acknowledged here, but because they can vary greatly are not quantified.

Seepage from a waste storage pond, assuming no preferential flow paths, is calculated using Darcy's Law and will vary according to the materials used to construct the waste storage pond as well as the operation and maintenance of the pond. Assuming steady state conditions, the amount of seepage will vary based on head (depth of liquid, which varies), soils, compaction, and permeability. Conditions that allow greater seepage will increase the risk of discharge.

The time of travel (TOT) from the bottom of the waste storage pond to groundwater is dependent on many environmental factors. Put simply the TOT is the time it takes for a drop of water to move from the point just under the pond to the point it reaches the first groundwater below the pond. Again, this assumes steady state conditions. The TOT is dependent on the environmental conditions when the waste storage pond was built. Some conditions such as highly porous soils and seasonally high groundwater will generate a higher risk for discharge to groundwater than high clay soils and a very deep distance to groundwater.

If the risk factors indicate there is a discharge to groundwater based on a preponderance of evidence, the facility operator has the option of demonstrating there is no discharge to groundwater through a study designed to determine if there is a discharge from the waste storage pond. The study must be designed and verified by a licensed hydrogeologist with experience performing this type of work (RCW 18.220 and WAC 308-15). If the study determines there is a discharge to groundwater, the owner or operator of the facility must apply for coverage under the state permit.

Additional factors that Ecology may consider when determining based on a preponderance of the evidence if there is a discharge from a CAFO's waste storage pond to groundwater include, but are not limited to:

1. Results from an assessment of the waste storage pond conducted by licensed engineer, such as NRCS Engineering Technical Note 23 – Assessment Procedure for Existing Waste Storage Ponds.
2. Type of construction, e.g. above ground storage tank, in ground pit, earthen embankments.
3. Permeability of the structure walls, base, and liner (e.g. synthetic or clay) if present.
4. The depth of liquid in the waste storage pond when full and seasonal variations.
5. How long the waste storage pond is full, empty, or in-between.
6. Any additional sealing of the structure or liner pores provided by manure.
7. Operations and maintenance of structure that may have altered the physical characteristics of the structure or liner (e.g. maintenance removes sealing of liner pores by manure).
8. Age of the structure.

9. Permeability of the soils and presences of tile drainage below the structure.
10. Depth to groundwater.
11. Preferential flow paths (e.g. cracks, scoured areas, liner punctures).

Groundwater Discharges from Land Application Fields

Land application fields where manure, litter, and process wastewater are applied as crop nutrients can discharge pollutants to groundwater and be a source of groundwater pollution. When sources of nutrients are excessively applied to the field beyond the amounts for optimal crop growth, the land application activity is considered a discharge of waste to ground. Excess nitrate in the soil profile may travel beyond the crop's root zone and result in a discharge to groundwater. Discharge of waste to ground and discharges to groundwater require permitting in Washington.

Application of nutrients in excess of crop nutrient requirements creates a substantial potential to pollute groundwater. CAFOs that pollute groundwater through over application of manure, litter, process wastewater or other organic by-products and do not have a requirement to obtain a solid waste handling permit are required to apply for state-only permit.

Some operations may be required to obtain a solid waste handling permit from the solid waste permitting authority (local health departments). However, as allowed by RCW 70.95.310, a local health departments may defer to another permit if it addresses the same sources of discharge to ground that a solid waste handling permit would. The other permit needs to have at least the same level of protection provided by a solid waste handling permit. Should an owner or operator of a facility be in a situation where excess nutrients were applied to land application fields and a solid waste handling permit is required, an option is for the local health department to defer to the state only permit. This would cover the facility for both solid waste handling purposes as well as discharges to groundwater under chapter 90.48 RCW.

Case by Case Permitting of Small CAFOs

Small CAFOs, as defined in Table 2 in the permit, with discharges to surface or groundwater may require permitting on a case by case basis. In order require a small facility to obtain a CAFO permit (state or combined), Ecology must assess whether the small facility is a significant contributor of pollutants to surface or groundwater and designate it a small CAFO, and notify the operator of the need to submit an application via technical assistance letter. The significant contributor analysis usually involves an inspection, sampling, and collection of facts regarding the amount of manure, litter, or process wastewater reaching surface water or groundwater, depth to groundwater, facility location relative to surface waters, how manure, litter, or process wastewater are conveyed to surface water, landscape factors affecting frequency and likelihood of discharge, and other relevant factors. These significant contributor factors come from EPA's regulations at 40 CFR § 122.23(c).

Proposed Revisions

Ecology is proposing to move the text in permit condition from S2.A to S1.A and modifying Table 2. Ecology found that interested parties were confused by having the requirements to obtain a permit split between two sections – previously S1 and S2.A. Ecology moved the text from S2.A and created a new section in S1. Additionally, Ecology clarified the requirements embedded in Table 2 in the previous permit by removing them from the table and placing it in the body of the permit text. These changes do not change the requirements for facilities that must obtain permit coverage.

B. Activities Covered Under This Permit

S1.A authorizes the discharge of pollutants from two defined areas on a CAFO—the production area and the land application fields—under very limited circumstances. Activities on other areas of the facility (e.g. pastures with sustained vegetated growth) are required to comply with state water pollution control law prohibiting the discharge of pollution to water (RCW 90.48.080). Ecology chose not to include these areas under the CAFO general permits as they do not meet the definition of areas that are part of a CAFO. Special Condition S3 describes in detail the conditionally authorized discharges from each area on the facility and in certain watersheds.

Section 402 of the CWA (33 USC § 1342) requires that a NPDES permit be issued for the discharge of pollutants to waters of the United States. Chapter 90.48 RCW also requires a state waste discharge permit for any form of commercial or industrial operation discharging solid or liquid waste material to waters of the state (surface or groundwater). As the delegated CWA authority in Washington, Ecology issues combined permits which authorize discharges to surface and groundwater under both state and federal authority.

Authorized Discharges in the State-only Permit

The state-only permit authorizes discharges to groundwater only. Groundwater means all underground waters within the jurisdiction of the state of Washington (RCW 90.48.020, WAC 173-200-020 and WAC 173-226-030). Surface water discharges authorized in the Combined permit, for example, discharges resulting from extreme storm events, are not authorized in the State-only permit. See S3 Discharge Limits for details.

Authorized Discharges in the Combined Permit

The Combined permit authorizes certain discharges to surface and groundwaters. Surface waters include lakes, rivers, ponds, streams, inland waters, wetlands, brackish waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington (RCW 90.48.020, WAC 173-201A-020 and WAC 173-226-030). Groundwaters are all underground waters within the jurisdiction of the state of Washington (RCW 90.48.020, WAC 173-200-020 and WAC 173-226-030). See S3 Discharge Limits for details.

Proposed Revisions

Ecology is proposing to remove the statement “All conditionally authorized discharges and activities must be consistent with the terms and conditions of this permit” because it is contained in general condition 1.

C. Geographic Area Covered

The permits provide coverage for discharges of waste material (manure, litter, process wastewater) from CAFOs within the State of Washington where Ecology has permitting authority (chapter 90.48 RCW).

Ecology does not have permitting authority for discharges from federal operators or tribal lands except for a portion of Puyallup Tribal land under the Puyallup Tribe of Indians Land Claims Settlement Act of 1989, 25 USC § 1773.

Some conditions in the permit apply differently in certain parts of the State. Special Condition S4 requires different soil sampling and adaptive management actions based on the climate where the facility operates.

Proposed Revision

Ecology is proposing to add a clarification to this special condition to indicate that some requirements in this permit differ based on the location of the CAFO. The previous CAFO permits covered regionally different requirements in S4. The draft CAFO permits do not alter that framework, but highlight the regional difference in pollution prevention requirements at the top of the permit document. Ecology believes this will make it clearer that there are conditions in the permit that vary by climate.

S2 PERMIT ADMINISTRATION

Special Condition S2 concerns the administrative tasks in applying for permit coverage, issuing coverage, modifying coverage, transferring coverage, and terminating coverage based on 40 CFR 122, Chapter 173-226 WAC, and relevant case law.

A. How to Apply for Permit Coverage

Unpermitted CAFOs seeking coverage under the CAFO general permits must submit a **permit application (Notice of Intent or NOI)** and a Manure Pollution Prevention Plan (MPPP) to Ecology at least 60 days before any discharge to waters of the state occur (RCW 90.48.170).

A copy of the permit application form is available from [Ecology's CAFO permit webpage](#)¹⁸. The information required in the form comes from 40 CFR 122.21(i). Unpermitted CAFOs are required in 40 CFR 122.21(i) to submit site-specific nutrient management plans as part of the application for coverage. The nutrient management plans must at a minimum satisfy the requirements in 40 CFR 122.42(e) and 40 CFR 412, as applicable.

An official who has signature authority for the entity applying for permit coverage must sign all documents (WAC 173-226-200).

Special Procedures for Applications for the State-only Permit

Existing facilities: Applications for facilities built and operating before the issuance date of the CAFO permits are not required to public notice their permit application.

New facilities: Applicants who build a new facility and begin operation after the issuance date of the CAFO permits must publish a public notice of their application for permit coverage. Ecology must receive the complete application for permit coverage on or before the first publication date of the public notice the permit applicant posts in a newspaper of general circulation within the county in which the discharge is proposed (WAC 173-226-130(5)).

The public has the opportunity to comment on the permit application, MPPP, and the proposed coverage during the 30 days after publication of the second public notice (public comment period). Ecology will consider comments during this period. If Ecology receives no substantive comments, it may issue permit coverage on the 38th day (at the earliest) following receipt of a complete application. The public has the right to appeal coverage decisions (WAC 173-226-190).

¹⁸ <https://ecology.wa.gov/cafo>

Special Procedures for Applications to the Combined Permit

All combined permit applicants, whether they are new or existing facilities, must public notice their permit application (Ecology must receive the complete application for permit coverage on or before the second publication date of the public notice the permit applicant posts in a newspaper of general circulation (WAC 173-226-130). Ecology considers a newspaper of general circulation to be a major newspaper publication for a region.

The public has the opportunity to comment on the permit application and the proposed coverage during the 30 days after publication of the second public notice (public comment period). Ecology will consider comments about the applicability or nonapplicability of the permit to the proposed activity received during this period. If Ecology receives no substantive comments, it may issue permit coverage on the 38th day (at the earliest) following receipt of a complete application. The public has the right to appeal coverage decisions (WAC 173-226-190).

Proposed Revision

In response to [Wash. State Dairy Fed'n v. Dep't of Ecology](#) (2021), Ecology changed the process for applying for coverage under the CAFO general permits. Applications for coverage must include both the notice of intent form, discussed above and a site-specific MPPP. The documents must be submitted to Ecology for review and a preliminary determination of the application's completeness. When Ecology notifies the applicant that their application is complete, the applicant will publish public notice, if required by WAC 173-226-130(5).

Ecology is also proposing to require electronic NOIs unless a Permittee obtains a waiver. The requirement for electronic submittal makes progress with Ecology's obligation to comply with EPA's NPDES Electronic Reporting Rule (40 CFR Parts 122, 123, 127, 403, 501 and 503). RCW 43.17.095 also requires Ecology to offer electronic reporting options.

This proposed electronic NOI is expected to save time and resources for permittees and Ecology (e.g., eliminating paperwork, data entry workload, database errors) while improving compliance and protection of water quality. It will also enhance transparency and public accountability.

The electronic reporting waiver provisions are intended to allow a paper option for small business that may not have the ability to use the Water Quality Web Portal system (e.g. they do not have broadband internet or a business computer). The permit contains mailing instructions for permittees who receive a waiver.

Electronic NOIs are submitted through [Ecology's Water Quality Permitting Portal](#)¹⁹.

¹⁹ <https://secureaccess.wa.gov/ecy/wqwebportal>

B. Permit Coverage Timeline

Ecology is not proposing changes to S2.C.

The section describes how Ecology is implementing WAC 173-226-200 in the permit so that the applicant for permit coverage can know what to expect when applying for permit coverage.

C. How to Transfer Permit Coverage

State waste discharge rules (WAC 173-226-210) provide for transfers of permit coverage from one party to another:

WAC 173-226-210

Transfer of permit coverage.

Coverage under a general permit is automatically transferred to a new discharger if:

(1) A written, signed agreement between the old and new discharger containing a specific date for transfer of permit responsibility, coverage, and liability is submitted to the director; and

(2) The director does not notify the old and new discharger of the director's intent to revoke coverage under the general permit. If this notice is not given, the transfer is effective on the date specified in the agreement mentioned in subsection (1) of this section.

This would generally only occur when another party buys a permitted CAFO facility. To complete the permit coverage transfer, both the current permittee and new permittee must sign a *Transfer of Coverage Form* provided by Ecology. The transfer of coverage is complete once the form is signed by both parties. The new party then becomes the Permittee and accepts all permit responsibility and liability, including permit fees.

The Transfer of Coverage Form is available on [Ecology's CAFO permit webpage](https://ecology.wa.gov/cafo)²⁰. This form is not available through Ecology's Water Quality Permitting Portal.

Proposed Revisions

Ecology is proposing to clarify in the draft permits that transfer of permit coverage procedure may only be used when the waste management system does not change significantly. This ensures that permittees are in compliance with the Manure Pollution Prevention Plan modification requirements in special condition S4.A.

D. How to Terminate Permit Coverage

²⁰ <https://ecology.wa.gov/cafo>

As long as a permitted CAFO operation is discharging waste materials to waters of the state, the operation is required to have a permit (RCW 90.48.160). Permit coverage may be terminated only if the permittee demonstrates that the CAFO no longer has a discharge. The permits outline four conditions for permit termination. The conditions are based on WAC 173-226-240 and [Oregon's CAFO permit](#)²¹. At least one condition needs to be met to be considered eligible for permit coverage termination. All conditions require there to be no discharge from the CAFO. Requiring that there is no longer a discharge ensures that facilities that discharge remain covered under permit (WAC 173-226-230; 40 CFR § 122.64(b)).

When a permittee requests termination of their permit coverage, Ecology will request WSDA to perform a permit cancellation inspection. WSDA will complete a permit cancellation inspection for permitted CAFOs within 30 days of a request by Ecology and provide a recommendation for appropriate action Ecology will act on WSDA recommendations. This process is outlined in our 2011 "[Memorandum of Understanding between the Washington State Department of Agriculture and the Washington State Department of Ecology](#)"²².

Proposed Revisions

Ecology is proposing to include a procedure for when a Permittee requests termination of their permit coverage, but the information necessary for Ecology to make a termination decision is missing. This proposed revision will also allow Ecology more time to schedule an inspection, review records for compliance, and ensure that the facility has no discharge to waters of the state is therefore eligible for termination of permit coverage.

E. How to Renew Permit Coverage

General permits are typically revised every five (5) years. In order to continue their coverage under the revised general permit and comply with "Duty to Reapply" requirements in state and federal code, Permittees must submit a renewal application to Ecology at least one hundred eighty (180) days before the current version of the general permit expires (40 CFR §122.21(d), 40 CFR §122.41(b), and WAC 183-220-180(2)). Ecology typically notifies permittees of reapplication deadlines well in advance of the deadline, but permittees should not rely on this courtesy reminder. Coverage under an expired general permit for Permittees who fail to submit a timely and sufficient application will expire on the expiration date of the general permit. Ecology will consider any Permittee that does not reapply for coverage as a ***new applicant***.

Proposed Revisions

General Condition G17 Duty to Reapply is a requirement in all NPDES and SWD permits. Ecology added this section to clarify that CAFO permittees renewing their coverage are only required to

²¹ <https://www.oregon.gov/oda/programs/naturalresources/pages/cafo.aspx>

²² <https://ecology.wa.gov/DOE/files/6f/6f30de07-feb0-463a-958e-cf48df3a43bf.pdf>

submit an NOI. If the Permittee is making changes to their MPPP, they must follow procedures for revised MPPPs in special condition S4.A.4 Update of the MPPP.

S3 DISCHARGE LIMITS

Discharge limits are amounts of discharge whether volume, concentration, or frequency that must not be exceeded. Several permit conditions are designed to prevent Permittees from exceeding discharge limits and thus, violating water quality standards. The CAFO permits use technology-based requirements for preventing and controlling discharges. In the state and combined permits, technology-based requirements include the implementation of AKART and BMPs. Implementation of AKART prior to discharge is required by:

- RCW 90.48.010
- RCW 90.54.020(3)(b)
- RCW 90.54.040
- RCW 90.54.520
- WAC 173-221A-020
- WAC 173-226-070(1)

Water quality based effluent limits require the authorized discharges from a CAFO must not cause or contribute to an exceedance of – i.e. the discharge may not cause a measured water quality parameter to increase to a level above that set in the water quality standards. See also the sections listed below for more discussion on the various water quality standards:

- Chapter 173-201A WAC Water quality standards for surface waters of the state of Washington
- Chapter 173-200 WAC Water quality standards for groundwaters of the state of Washington

The discharges authorized by a permit are also permit limits. Discharges that are not authorized by the permit are considered a permit violation. The Permittee must ensure that any discharges are limited to only those allowed by permit.

A. Limits Based on Total Maximum Daily Loads

Ecology publishes Total Maximum Daily Load (TMDL) reports for some impaired waterbodies. These loading reports may establish wasteload allocations that are used to derive effluent limits on on point source discharges in the TMDL area (e.g., watershed, basin, sub-basin, etc.). When an applicable TMDL establishes a waste load allocation for a permitted CAFO (or CAFOs), all discharges must be consistent with the allocation. To achieve this, permittees may need to consider additional BMPs or technologies appropriate for the pollutants of concern. Examples include implementing additional best management practices or exporting manure outside of the watershed or to an anaerobic digester.

Where a facility discharges to a waterbody with an approved TMDL, Ecology will notify Permittees in writing of any additional limits or controls necessary to meet any waste load

allocation. This notification will come when Ecology grants permit coverage. For purposes of this requirement, an applicable TMDL means final TMDLs that are approved by US EPA on or before the date of permit coverage. TMDLs approved after the issuance date of this permit, or a specific facility's permit coverage, become applicable to the Permittee only if Ecology imposes the TMDL through an administrative order.

For waterbodies with an EPA-approved Final TMDL, refer to [Ecology's list of TMDLs](#)²³.

Proposed Revisions

Ecology made minor changes to clarify that pollutant loads for permitted CAFOs established in a TMDL are wasteload allocations. Wasteload allocations quantify how much of the pollutant(s) can be discharged from point sources, along with other sources, and have the water body still meet water quality standards. The previous permit incorrectly referred to "load allocations", the terminology for nonpoint pollution. The draft permit also includes an updated web address for TMDLs.

B. Limits based on Impaired Waterbodies

Ecology periodically reviews water quality data to determine if water bodies fail to meet surface water quality standards. Section 303(d) of the CWA requires that waters not meeting surface water quality standards undergo an evaluation of the cause and amount of the pollution in the waterbody, and need for a TMDL or other water clean-up plan to reduce point source pollution with wasteload allocations, or nonpoint pollution sources with load allocations.

Where a permitted facility discharges to an impaired waterbody without a TMDL, Ecology notifies Permittees in writing of additional limits or controls necessary to meet water quality standards. This notification comes when Ecology grants permit coverage. In the case of the CAFO general permits where the authorized discharges are episodic and limited, no discharges to impaired waters would be authorized. The permittee must not cause or contribute to any impairment for which the waterbody is currently impaired.

For a list of impaired waterbodies in Washington State, refer to [Ecology's impaired waterbody database](#)²⁴.

Proposed Revisions

Ecology proposes minor changes to clarify that impaired waterbodies are Category 5 waterbodies on the most recent EPA-approved CWA Section 303(d) list at the time of permit issuance of permit coverage of a specific facility. The draft permit also includes an updated web address for impaired waterbodies.

²³ <https://ecology.wa.gov/TMDLs>

²⁴ <https://ecology.wa.gov/303d>

C. Limits for the Production Area

Ecology is not proposing changes to S3.C.

Surface water discharges are not authorized under the state permit. This permit conditionally authorizes discharges only to groundwater, under the authority of Chapter 90.48.160 RCW.

For the combined permit, the federal CAFO rules in 40 CFR § 412 specify the conditions under which a surface water discharge may occur from a CAFO's production area. If a production area is designed, constructed, operated, and maintained to contain all process-generated (generated by facility operation) wastewaters plus the runoff from a 25-year, 24-hour rainfall event at the location of the CAFO, any process wastewater pollutants in the overflow may be discharged to surface water provided that the discharge will not violate water quality standards. The combined permit also conditionally authorizes discharges to groundwater, under the authority of Chapter 90.48.160 RCW.

D. Limits for Land Application Fields

Ecology is not proposing changes to S3.D.

Surface water discharges are not allowed under the state permit, therefore discharges under the state permit are limited to only groundwater, provided the Permittee is in compliance with the permit.

The combined permit conditionally authorizes discharges from land application fields when they meet the definition of agricultural stormwater. Section 502 of the federal CWA exempts agricultural stormwater from the definition of a point source of pollution. Under the combined permit, if all the following are true, then a precipitation related surface water discharge from a land application field is agricultural stormwater and does not violate the combined permit:

1. The discharge was generated by precipitation,
2. The discharge was not from the production area,
3. The discharge was not caused by human activities (e.g. land application, irrigation) even if the activity took place during precipitation, and
4. The CAFO was operating in accordance with their site-specific nutrient management plan and maintains records demonstrating compliance.

Dry weather discharges are never considered agricultural stormwater. See the previous section in this fact sheet for a longer discussion on [agricultural stormwater](#).

S4 MANURE POLLUTION PREVENTION

40 CFR 122.23(h) requires that as part of the permit application process, the permit applicant develop and submit a nutrient management plan (NMP) to the permitting authority (i.e. Ecology in Washington State). The NMP contains a set of actions and activities developed by the permit applicant to address the nine elements in 40 CFR 122.42(e)(1). Ecology must review the actions and activities and determine if they are adequate for protecting water quality. If adequate, the actions and activities developed by the permit applicant undergo public review and comment, and then become permit effluent limits.

Because a CAFO could be covered under either the state or combined permit, and could move from being covered by one permit to the other, most of the conditions for manure pollution prevention are the same in both permits. This is to prevent confusion and the need for a CAFO to change its practices depending on the permit coverage type.

A. Pollution Prevention Plan

Federal rules at 40 CFR § 122.23(h) and § 122.42(e)(1) require that, as part of the permit application process, the applicant must develop and submit a NMP which contains (after review, public comment, and approval) the facility effluent limitations. Ecology has been prescriptive with the nine minimum elements from 40 CFR § 122.42(e)(1) in the text of the state and combined general permits. To complete the requirements of 40 CFR § 122.23(h) and § 122.42(e)(1), the applicant must describe and document how they will meet the requirements. The MPPP is a document developed by the Permittee that documents how the Permittee is meeting the performance objectives in permit conditions S4.A-Q at their facility. Ecology's intention in being more prescriptive with the minimum technical and operating standards is to providing a more clear compliance pathway.

The MPPP does not replace the Dairy Nutrient Management Plan required for dairies by chapter 90.64 RCW. It also does not replace the Comprehensive Nutrient Management Plan required by NRCS to participate in cost-share programs. The permits' MPPP covers a portion of the requirements in a Dairy Nutrient Management Plan or Comprehensive Nutrient Management Plan.

Updates to the MPPP

The Permittee is required to revise its MPPP within thirty days of becoming aware of a change in the design of the facility's manure management infrastructure. If the changes will take a significant amount of time to complete, for example construction of a new storage facility, the revised MPPP must include the timeline for project completion.

CAFOs may increase their herd sizes, provided they revise their MPPP and submit it to Ecology for review and approval. WSDA uses a 10% increase in dairy animal numbers and field acres when it suggests a facility update its Dairy Nutrient Management Plan for the larger size. The

permits incorporates the same “10% increase threshold” as the basis to trigger the requirement to update and submit a revised MPPP to Ecology. A Permittee may plan for a greater increase so that it does not have to modify its MPPP as often based upon animal number changes.

When Ecology receives a revised MPPP, we will review the changes to determine if they are substantial. Substantial changes will require that the public be notified of the revised MPPP and given the opportunity to review and comment on the revisions. Federal rules in 40 CFR 122.63 and 40 CFR 122.42(e)(6) define procedures for modifying CAFO permit coverages. 40 CFR 122.63 lists the type of minor changes that do not need to be publically noticed. In 40 CFR 122.42(e)(6), the substantial changes include, but are not limited to:

1. Adding new land application fields. There is an exception for land application areas that are covered by the terms of a nutrient management plan incorporated into an existing NPDES permit.
2. Any changes to the field-specific maximum annual rates for land application, and to the maximum amounts of nitrogen and phosphorus derived from all sources for each crop.
3. 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
4. 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 U.S.

Some minor modifications do not require public noticing under 40 CFR 122.63. CAFOs must submit the Nutrient Management Plan changes to Ecology. If Ecology determines they are nonsubstantial changes to the MPPP, public notice and comment is not required before the permit is revised. In that case, the revised MPPP will be made publically available via Ecology's [Permitting and Reporting Information System](#)²⁵. Ecology will notify the permittee of the revised terms.

Proposed Revisions

Special condition S4.A Pollution Prevention Plan was previously labeled as S4.Q Pollution Prevention Plan. Ecology moved this permit condition to the beginning of the section to highlight the procedural requirements when developing and implementing the Manure Pollution Prevention Plan.

In response to [Wash. State Dairy Fed'n v. Dep't of Ecology](#) (2021), Ecology proposes changes to the procedures for submitting and updating the MPPP.

In the draft permit, the MPPP must be submitted with the permit application and the public must be allowed to review and comment on the application and MPPP. For consistency in the permitting procedures, the change in the submittal deadline was applied to both the Combined

²⁵ <https://apps.ecology.wa.gov/paris/PermitLookup.aspx>

and State-only permits. Special condition S2.B How to Apply for Permit Coverage also reflects this change.

In the draft permit, revised MPPPs must be submitted to Ecology within 30 days of a change in design. Substantial changes must be publically noticed per 40 CFR 122.42(e)(6).

B. Production Area Run-off Controls

Under this permit condition, the CAFO operator must ensure that discharges of pollutants to surface water caused by stormwater or run-off are

Manure and soils from the production area or land application field that are tracked onto public roadways, is a source of polluted run-off. When it rains, these materials may be carried by run-off into surface waters. The state and combined permits are requiring that the Permittee control the materials tracked off-site (off of the production area or land application field) using specific BMPs (technology-based narrative effluent limit). Ecology has determined that this approach will be effective based on similar requirements in the Construction Stormwater General Permit. All construction sites must have “hardened” ingress and egress pads stabilized and surfaced with quarry spall, crushed rock, or other equivalent materials over filter cloth where equipment and vehicles leave the facility. For permit implementation and management guidance on track out BMPs, refer to BMP C105: Stabilized Construction Access in [Ecology’s Stormwater Management Manuals](#)²⁶.

Vegetated treatment areas must be constructed and maintained to treat the volume of runoff and mass of pollutants from the contributing area. The vegetated treatment area must not cause a violation of groundwater standards and may not discharge to surface waters. If a surface water discharge occurs, the permittee must collect and analyze representative sample(s) according to requirements in S5.E.Surface Water Discharges Prohibited in State-only Permit

Surface Water Discharges Prohibited in State-Only Permit

The state permit does not authorize discharges from the production area to surface waters. The conditions requiring control of facility run-off are meant to prevent surface water discharges from occurring. If a discharge from the production area occurs, it is a permit violation and Ecology may require the permittee to apply for the Combined Permit.

Surface Water Discharges Limited in Combined Permit

The combined permit authorizes discharges from the production area to surface water in limited cases per special condition S3; i.e., surface water discharges are prohibited unless the operator meets the exception requirements. For a discharge to qualify for the exception, the

²⁶ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals>

facility must be designed, constructed, operated, and maintained to capture all liquids and contaminated run-off plus the direct precipitation from a 24-hour, 25-year storm event. 40 CFR § 412,413. See the discussion in permit condition S3 Discharge Limits. Implementing these permit conditions prevent surface water discharges except during exceptional storm events.

Proposed Revisions

Ecology modified special condition S4.B to clarify that all discharges from the production area must be prevented, not just track out. In the Combined Permit, we included the requirement in 40 CFR §412,413 that all waste facilities be built and operated to contain all manure, litter, and process wastewater including the contaminated runoff and direct precipitation from a 24-hour, 25-year storm. This requirement was previously included in only special conditions S3.C and S4.B. We do not interpret this as imposing additional requirements on those complying with the previous permit.

Additionally, Ecology moved the requirements for filter strips to special condition S4.B. They were previously included under requirements for solid manure, litter, feed storage, and composting facilities. Filter strips may be used to treat and infiltrate contaminated runoff on any part of the production area, not only storage facilities, although this is most common set-up. Filter strips were renamed to 'vegetated treatment areas' to match the name given to these structures by NRCS in Conservation Practice Standard 635. The vegetated treatment areas requirements were updated to require that the design of the treatment BMP ensure hydraulic and nutrient balance.

The vegetated treatment area requirements are included in both the combined and state-only permit, based on AKART (Chapter 90.48 RCW). Ecology used NRCS Conservation Practice Standard 635 and treatment BMPs guidance in Ecology's Stormwater Management Manuals (2019) to develop the performance standard for vegetated treatment areas.

C. Storage of Manure, Litter, Process Wastewater, Other Organic By-Product, and Feed

This section of the permit is intended to ensure that discharges from the storage of manure, litter, process wastewater, animal feed, and other organic by-products do not result in a violation of applicable water quality standards. This permit condition covers requirements for storage volume, structure design and construction, what to do when closing a liquid waste storage pond, and maintenance. These requirements are used in both the state and combined permits to prevent surface water discharges and to limit discharges to the circumstances allowed by the combined permit. Monitoring and reporting requirements are referenced here, but are described in detail in other special conditions.

In general, the owner or operator of the facility is required to store materials in areas designed for either liquid or solid waste, collect contaminated water for later land application as crop nutrients. When possible, materials should be covered and clean water directed away from the

facility so that it does not come into contact with contaminants. This will reduce the storage volume needs of the facility. The owner or operator must describe in their MPPP how the pollution prevention measures are accomplished onsite.

In accordance with 40 CFR § 122.42(e)(1)(i), the draft general permits include the requirement for adequate storage of manure, litter, and process wastewater. Storage is adequate if it accounts for operational volume and emergency needs. The operational volume is the amount of manure, litter, process wastewater, and other organic materials accumulated during the storage period plus the normal runoff and seepage from the facility's drainage area. The storage period will be site-specific, depending on location and crop management plan. If an applicant's manure pollution prevention plan does not demonstrate adequate storage for the facility seeking permit coverage, Ecology will require changes or additional manure storage to be in compliance with special condition S4.B.

The draft general permits has specific requirements and considerations for liquid and storage structures. They are explained in the following two sections. Maintenance and the closure liquid waste storage ponds are discussed in the final two sections of this special condition.

Liquid Waste Storage Structures

The current industry standard for agricultural waste storage facility construction is NRCS Conservation Practice Standard 313. Agricultural engineers use NRCS' Agricultural Waste Management Field Handbook to design new and refurbish waste storage facilities to the Practice Standard.

Federal regulations require that waste storage pond be maintained in good working order, as they were built (40 CFR § 122.41(e)). A good inspection and maintenance program will protect a structure against deterioration and prolong its life. In Washington, any liquid storage facility that impounds 10 acre-feet or more (measured from natural grade to the crest of the impoundment) above ground level and not overseen by another dam safety program (e.g. federal dam safety) is required to comply with chapter 173-175 WAC (Dam Safety). 10 acre-feet is approximately 32.5 million gallons. Most waste storage ponds are likely to be smaller than this, but due to similarities in construction, many of the maintenance procedures required of large liquid impoundments also apply to smaller ponds as well.

The two feet of vertical separation between the bottom of the waste storage pond and the water table is the standard minimum distance Ecology uses for all waste storage ponds. This is the minimum distance necessary to provide filtering and attenuation of pathogens into groundwater.

Maintenance will prolong the life of a structure and help prevent catastrophic failure. Permittees should consider the actions necessary to deal with a catastrophic failure of a waste storage pond to prevent, or minimize to the extent possible, environmental harm.

An “**upset**” is not a defense against failure to maintain a waste storage (or other containment) structure. 40 CRF § 122.41(n) clearly lays out the requirements that must be met for a failure to be considered an upset.

Solid Material Storage Facilities

The draft permit conditions listed here address solids storage and composting areas where solid manure, bedding, and other organic by-products are dried, stacked, and sometimes composted for further use. It does not address disposal or composting of animal mortalities. Refer to special condition S4.G Livestock Mortality Management. Solid material in this permit refers to stackable material that does not flow and is generally greater than 25 percent solids.

The purpose of storing solid waste piles on compacted or impervious surfaces is to control the seepage from leaching into the ground. Water is a by-product of the decomposition process and may seep from the pile over time, but zero discharge is possible by containing all leachate from the facility (in tanks or ponds) or preventing production of leachate (by composting under a roof or in an enclosed building). NRCS recognizes that the need for seepage control may vary based on stored material’s seepage potential, whether the storage facility is roofed, and the climate where the facility is located (NRCS PS 313).

Permittees may refer to several best management practices for preventing discharges from composting areas. S403 BMPs for Commercial Composting in Ecology’s Stormwater Management Manual include procedures for eliminating discharges. NRCS Conservation Practice Standards 317 and 313 recommend installing a concrete slab or compacted soil pad facilitates the collection of that seepage which then must be transferred to facilities designed for liquid storage. Likewise, runoff from the pile must be collected and transferred to liquid storage. Depending on the geographic location of the facility, the volume of contaminated runoff can be reduced by covering the pile. In recent evaluations of different solid storage practices, covering the pile reduced the mass of nutrients lost via runoff and seepage (Discovery Farms Washington Dry Manure Storage Report, 2021).

Field stockpiling of solid material is a temporary storage practice used prior to land application. These temporary piles must be located away from surface waters such that runoff from the pile does not enter surface waters.

The effectiveness of the restrictive layer or soil pad under both animal pens and solid manure piles depends on maintenance of the surface. The draft permit requires that the soil pad compaction be maintained so there is continued control of seepage and runoff based on AKART requirements in Chapter 90.48 RCW. Weekly visual inspections are required in Special Condition S5.A. The inspection results are documented in accordance with Special Condition S6.A.

Maintain Storage Structures

This set of permit conditions also includes general maintenance requirements. In order to ensure that waste materials are properly managed, infrastructure must be maintained in proper working order. Due to the variation in facility infrastructure, the facility owner or operator must identify facility-specific infrastructure maintenance. The procedures, plans, and schedules are to be described in their MPPP.

Waste Storage Pond Closure Procedures

Ecology has received questions about how waste storage pond should be closed (decommissioned) in order to comply with regulations. The language included in the draft permits clarifies the conditions to permanently or temporarily close a pond for water quality protection. The conditions are intended to reduce the risk of discharge to groundwater of nutrients contained in and below the structure. This is because certain nutrients can build up in the waste storage pond soils. For example, ammonia/ammonium is known to be at high levels in the pond liner and depending on the time the pond has been in operation, a certain amount of soil depth below the waste storage pond (Environmental Water Resources Institute, 2005). Then when the waste storage pond is decommissioned, oxygen becomes more available which causes mineralization of ammonia to nitrate which is then mobile with any water percolating down through the soil profile.

The permit's proposed closure requirements are based partially on EPA's Idaho CAFO permit requirements, Oregon CAFO permit requirements, and NRCS Practice Standard 360 (Closure of Waste Impoundments) to meet technology based requirements of AKART (Chapter 90.48 RCW) and minimize the risk of discharge to surface or groundwaters.

Federal CAFO rules require that all open surface liquid waste storage structures must have a depth gauge which clearly indicates the minimum capacity to contain all the run-off and direct precipitation of a 25-year 24-hour storm when the waste storage is full. The depth gauge should cover the entire depth of the structure so that level of liquid waste may be observed to help detect leaks (which is different from seepage) in the waste storage pond. The level of liquid in the pond must be observed and recorded each week during pond inspection. See permit condition S5 for inspection and record keeping requirements.

Proposed Revisions

Ecology is proposing to change the standard to which a new waste storage pond must be designed and built. In typical waste storage pond design guidance, the liner standards are represented as either a combination of permeability and liner thickness or seepage rate, sometimes called specific discharge. NRCS engineers in Washington indicated a preference for the seepage rate measurement. We adopted the design standard used in NRCS' agricultural waste management design handbook (NRCS, 2009) and practice standards (NRCS, 2017). The

State of Idaho uses "specific discharge" as regulatory limit. Ecology's forthcoming guidance for municipal wastewater treatment facilities includes both approaches.

Ecology is also proposing to include additional specificity on the performance requirements for solid material storage and composting areas. These changes are made in response to [Wash. State Dairy Fed'n v. Dep't of Ecology](#) (2021). Authority to include these requirements is based upon WAC 173-226-070.

D. Other Above and Below Ground Infrastructure

Ecology is not proposing changes to S4.D.

Similar to storage structures for manure, litter, and process wastewater, other infrastructure such as buried pipes may be used by a facility for management of manure, litter, and process wastewater. These conditions are in place to ensure that owners and operators of a facility maintain this type of infrastructure to prevent and control discharges. Authority to include these requirements is based upon WAC 173-226-070.

E. Diversion of Clean Water

Water that comes into contact with animals, manure, litter, process wastewater or other sources of contaminants on-site (e.g. silage leachate) will contain pollutants (e.g. nutrients, fecal coliform, etc.). This type of contaminated water must be collected and prevented from discharging.

Clean water may be intercepted and diverted away from the manure, litter, process wastewater, feed stock and other sources of contamination. So long as the water does not come into contact with contaminants on-site, the clean water diverted away from the facility and discharged off-site. Diverting clean water away from the facility reduces the volume that the facility manure management systems must handle and minimizes the potential for violations of water quality standards.

These requirements are included in both the combined and state-only permit, based upon 40 CFR 122.42(e)(1)(iii) and AKART (Chapter 90.48 RCW).

Surface Water Discharges Prohibited in State-only Permit

The state permit does not allow discharges to surface water. All water that comes into contact with contaminants must be directed to storage systems. If water that has come in contact with pollutants is allowed to run off the production area into surface waters, or conduits to surface water this is considered a discharge to surface waters and is a permit violation. A discharge to surface waters would trigger the requirement that the facility apply for the combined permit based on 40 CFR 122.21(a) and 40 CFR 122.23(d),

Surface Water Discharges Limited in Combined Permit

The combined permit only allows surface water discharges in specific instances, based on 40 CFR § 412; see permit condition S3 Discharge Limits. Unless those conditions are met, all water that comes into contact with CAFO contaminants must be directed to storage systems. If water that has come in contact with pollutants is allowed to run off the production area into surface waters, or conduits to surface or groundwater, this is considered a discharge and unless the specific conditions in permit condition S3 are met, the discharge is a permit violation.

F. Prevent Direct Animal Contact with Water

Ecology is not proposing changes to S4.F.

Animal access to surface waters causes direct discharges to the water from animal fecal matter (directly excreted or otherwise carried on the animal). Animal use of the water also can lead to degradation of the riparian areas and releases of sediment (turbidity) from animals stirring the bottom sediments and trampling the water body banks. Because heavy use of stream banks by animals for watering causes water quality pollution, animals must be fenced out of riparian areas.

These requirements are based upon 40 CFR § 122.42(e)(1)(iv) and RCW 90.48.080. However, because a discharge from direct animal contact with surface water is not a discharge allowed by either the state or combined permits, these requirements are included in both permits.

Ecology is developing [clean water guidance for all agricultural producers](#)²⁷ that describes our recommended BMPs to protect water quality. We recommend Permittees consult this guidance when considering options for complying with this permit condition.

Ecology clarified in the draft permits that animals must be prohibited from the field discharge management areas established in special condition S4.M. Animal access in the streamside areas that are meant to filter or treat runoff will impact their function in pollution prevention.

Ecology outlined how field staff evaluate streamside cover and document site conditions that we know contribute to water pollution in [Clean Water and Livestock Operations: Assessing Risks to Water Quality](#)²⁸ (Publication 15-10-020).

G. Chemical Handling

Ecology is not proposing changes to S4.G.

In the normal course of operation, CAFOs may use chemicals such as pesticides, veterinary medications, cleaning and disinfection agents, or fuels. In general, manure management systems are not designed to treat these chemicals, so inadvertent contamination of the manure

²⁷ <https://ecology.wa.gov/About-us/Accountability-transparency/Partnerships-committees/Voluntary-Clean-Water-Guidance-for-Agriculture-Adv>

²⁸ <https://apps.ecology.wa.gov/publications/SummaryPages/1510020.html>

management system must be prevented to protect surface and groundwater quality. This permit condition prohibits the CAFO operator from disposing of excess, unused, or unwanted chemicals in any manure management system, surface water or conduit to surface or groundwaters.

Additionally, because the chemicals can be pollutants, the permit conditions require that the owner of operator of a facility ensure that chemicals are appropriately handled and stored to prevent spills. Permittees must develop and implement emergency procedures in the event of a chemical spill. These requirements are based upon 40 CFR § 122.42(e)(1)(v) and WAC 173-226-070. For permit implementation and management guidance on chemical handling BMPs, refer to BMPs for Spill Prevention and Cleanup in [Ecology's Stormwater Management Manuals](#)²⁹.

Many agrochemicals are regulated under Federal Insecticide Fungicide and Rodenticide Act (FIFRA) and have detailed disposal requirements for excess, unused, or unwanted chemicals or used wash water. Where a chemical does not have a FIFRA label, a Safety Data Sheets (SDS) provides proper handling and disposal instructions. The permit requires CAFO operators to dispose of chemicals according to requirements on the FIFRA label or instructions in the SDS Ecology considers these requirements, in part, AKART (WAC 173-226-070).

Because chemicals are used on all types of CAFO facilities regardless of if they only have a groundwater discharge or a surface water discharge, the chemical handling requirements are included in both the state and combined permits.

H. Livestock Mortality Management

As livestock carcasses decompose, they release leachate that is high in nutrients and pathogens. Proper handling of livestock mortalities is important for the protection of water quality and for biosecurity. Through different management practices, the environmental and biosecurity impacts of livestock mortalities can be reduced. For routine disposal, a number of options exist including composting, rendering, burial, and natural decomposition.

Federal CAFO rules require proper management of livestock mortalities. Mortalities may not be disposed of in liquid waste handling systems (unless the system is designed to handle mortalities), and they must be handled in a way that prevents discharge of pollutants. Addressing livestock mortalities to prevent discharges is based partially upon 40 CFR § 122.42(e)(1)(ii). A discharge from animal mortalities is not a discharge allowed by either the state or combined permits, therefore these requirements are included in both permits.

Washington State also has laws and rules that that are more explicit in describing how mortalities must be handled. The permits require compliance with these requirements at RCW 70A.205, WAC 16-25 and WAC 173-350. Additionally, local ordinances may have requirements

²⁹ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals>

beyond those in Federal and State regulations. Permittees must comply with applicable local codes too.

Ecology has only included requirements related to water quality in the permit. However, chapter 16-25 WAC contains requirements beyond those protecting water quality such as moving mortalities away from fence lines if allowed to decompose naturally.

Mortalities due to unknown causes must always be presumed to be from disease. RCW 16.36.092 requires that any livestock that died of disease or unknown causes will be disposed of as described in rule by the director of the Washington State Department of Agriculture. This is implemented in chapter 16-25 WAC which also covers routine disposal of mortalities.

If on-farm mortality composting is conducted, chapter 70.A.205 RCW and chapter 173-350 WAC must be complied with. Ecology developed technical guidance called “On-Farm Composting of Livestock Mortalities” (ECY Pub No. 05-07-034), however some of the regulatory guidance found in this document is no longer current. Until an update is completed, refer to RCW 70.95.306 for details specific to composting bovine and equine carcasses under routine conditions and when compost is distributed to a third party, as these statutory requirements have not changed. General regulatory information on agricultural composting can be found in WAC 173-350-220. Please contact the Department of Ecology’s Solid Waste Management program or your local health department if you have questions about complying with chapter 70.A.205 RCW and chapter 173-350 WAC.

The technical guidance remains valid. State solid waste regulations were last amended in 2018, prompting a need to update these guidelines.

In the event of livestock death from a reportable disease, the state veterinarian or local health department must determine appropriate carcass disposal methods.

Proposed Revisions

Ecology is proposing to remove the detail on the three common mortality management practices. We received feedback that because Permittees must follow all requirements of WAC 16-25, which are more in-depth than what was included in the previous permits, the permits’ detail on burial, composting, and natural decomposition was unhelpful. To streamline the permit condition and make clear that all parts of relevant regulations must be followed, Ecology removed the mortality management details and replaced it with a reference to WAC 16-25.

The regulations at 70.95 RCW were moved to 70.A.205 RCW. Ecology has changed the reference to avoid confusion. No changes were made to the state law that impact the composting of manure.

I. Manure, Litter, Process Wastewater, and Other Organic By-Products Sampling and Nutrient Analysis

Nutrient concentrations in manure vary widely between facilities and across seasons. Accurate nutrient concentration measurements from manure and wastewater are a foundation for making agronomic applications at a rate that ensures plant or soil uptake without leaching to groundwater and ensuring manure is not a discarded waste (see the previous section [Meeting Beneficial Use Definition](#)). For this reason, Ecology established a sampling frequency in the previous permit that requires collection of three samples spaced throughout the application season. The permittee then uses the results in preparing and following the field-specific nutrient budget (special condition S4.K.1) and estimating application rates (special condition S4.K.2).

Where possible, Ecology has required soil and manure sampling and analysis similar to the requirements of chapter 90.64 RCW and WAC 16-611.

Proposed Revisions

In the draft permit, the reference to TSUM200 was removed to allow sampling and analysis of nutrient sources before TSUM200. Land application still may not occur before TSUM200, based on AKART (Chapter 90.48 RCW). This change was made to accommodate a possible delay of a week in receiving the results from nutrient source sampling and analysis, which causes a conflict with special condition S4.K.3.

Ecology also specified that samples must be collected such that the results will be as representative as possible of the nutrient concentrations at the time of application. Together, these two changes serve to remove barriers to making safe, early applications. Nutrient applications in the early season are generally preferable to late season applications when plant uptake begins to decline. See land application restrictions in special condition S4.J.2 for more on when applications are prohibited.

Ecology made edits to improve the readability of the permit condition.

J. Soil Sampling and Nutrient Analysis

Soil sampling is an essential part of determining what nutrients are available for a crop and therefore what nutrients are needed to meet crop and yield goals. Soil sampling is monitoring tool used to implement AKART and ensure that excess nutrients do not leach or discharge to groundwater. Early season soil sampling is necessary to determine what nutrients are available or will become available to a crop over the growing season. Soil nutrient data is an important component of a field nutrient budget.

The late summer-early fall soil sampling is required as the “report card” or benchmark for how well the field nutrient budget and nutrient management practices performed during the growing season. These soil results triggers adaptive management action (permit condition S4.L) that the Permittee must take to improve their nutrient management. The post-harvest soil results are not used as enforceable limits and exceeding a threshold does not constitute a

permit violation. For more discussion of benchmarks and enforceable limits, see S4.L in this Fact Sheet.

Proposed Revisions

Ecology removed the requirement for soil sampling prior to TSUM200. It has been revised to a requirement to sample soil before land application, which may or may not coincide with reaching the TSUM200 threshold. The soil test results are to be used to develop field-specific nutrient budget and make decisions on appropriate land application rates. For permittees who are not applying shortly after TSUM200, the results from soil sampling in the previous permit did not provide consistently useful results. Soil nitrate results from later in the season may be more useful to informing nutrient management decisions and updating nutrient budgets. By providing flexibility to the permittee to determine the best time to collect soil samples that inform decision making, Ecology expects nutrient budgeting and post-harvest soil test results to improve. Improved source control of nutrients will ensure AKART and prevent water pollution.

Ecology made improvements to this permit condition by reorganizing the requirements into four sections and adding a fifth section to reference the methods section. The sampling depths by geographic differences were folded into a single section, the titles of the Spring and Fall soil sampling sections were changed, and the analytical method reference was moved into it's own section. The reorganization improves readability.

K. Land Application

Land application of manure, litter, process wastewater, and other materials is essential to provide nutrients for crop growth as part of a land treatment system. However, it is important that land application take place in a manner that does not pose a high risk to surface and groundwater quality. Examples of land application practices that increase the risk of discharge from land application fields include, but are not limited to:

- applying in places and during times where field run-off may occur,
- applying at times of year where crops will take up minimal to no nutrients,
- applying right up to the edge of a waterbody (e.g. no buffers or setbacks),
- not following appropriate application rates or nutrient budgets, and
- applying during precipitation or when other environmental factors increase the likelihood of discharge.

In order to reduce the risk of discharge to surface water from field run-off and to groundwater from excessive over-application, Ecology has included requirements to prevent application during higher risk times and areas that can pose a higher risk of discharge.

Authority to restrict land application to prevent and control discharges as AKART comes from WACs 173-226-070(1) and (3) and 173-226-180(1) as well as RCW 90.48.010 and 90.48.520.

In addition to the authorities provided by state statutes and rules, 40 CFR 122.42(e)(1)(viii) requires the establishment of protocols for the appropriate land application of manure, litter, process wastewater, and other sources of nutrients. In addition 40 CFR 123.36 requires that Ecology develop technical standards for CAFOs for the land application of manure, litter, process wastewater, and other sources of nutrients. The requirements which the technical standards must address and how the permit addresses those requirements are listed below:

- a. A field specific assessment that addresses the form, source, amount, timing, and method of application of nutrients. Permit condition S4.B and the yearly field nutrient budget form address these requirements.
- b. Achieve realistic production goals while minimizing nitrogen and phosphorus movement to surface and groundwaters. The permit yearly field nutrient budget form address these requirements which are also listed as permit condition S4.J.1.
- c. Determination of application rates must include a field specific assessment for the potential for nitrogen and phosphorus transport from the field. The permit yearly field nutrient budget form address these requirements which are also listed as permit condition S4.J.1.
- d. Determination of application rates must address the form, source, timing, and method of application.

These requirements are addressed in permit condition S4.J and K where controls are placed on the time of year application may take place, and the weather conditions in which application may take place. Timing of actual applications is left to the Permittee as long as the application takes place within the constraints placed on application within the permit.

In the previous permit cycle, nitrogen was the focus of the field nutrient budgets and MPPP as it is currently the primary nutrient of concern (e.g. high nitrates in groundwater in Yakima and Whatcom Counties). Ecology expected to have permittee soil phosphorus data from the 2017 permit cycle which development of phosphorus limits could be based upon. However, time constraints and a small dataset prevented Ecology from developing phosphorus limits in this permit and, therefore, nitrogen remains the focus of field nutrient budgets and MPPPs, as the primary nutrient of concern in the draft CAFO permits.

Yearly Field-Specific Nutrient Budget

The basis for including the requirement to follow a yearly nutrient budget for land application for manure, litter, process wastewater and other sources of nutrients is the concept of a field nutrient balance. Other regulatory and technical assistance agencies are in agreement that nutrient budgets are necessary for appropriate land application (WSDA, CDs, NRCS). A field nutrient mass balance means that the nutrient inputs (e.g. nutrient mineralization, fertilizer) to a field roughly equal the nutrient outputs (e.g. crop harvest removed from field).

$$\text{Nutrient Balance} = \text{Inputs} - \text{Outputs}$$

When inputs and outputs are in balance, this prevents excessive nutrients (e.g. nitrate) being left in the field soil at the end of the growing season that can leach past the root zone, into the vadose zone, and finally to groundwater.

$$\text{Inputs} - \text{Outputs} > 0 = \text{Excess Nutrients}$$

Excess nutrients that move down below the root zone of crops are going to enter groundwater at some point depending on the soil profile and environmental conditions of a location. Nutrients which move down below the crop root zone can impact groundwater. By requiring that Permittees follow a nutrient budget, the amount of excess nutrients moving to groundwater will be reduced and preventing discharges that cause or contribute to violations of water quality standards.

The permit conditions requiring Permittees to develop and follow a nutrient budget are the same between the state permit and combined permit. This is because the same activity will take place under both permits.

Resources for building nutrients budgets:

- Atmospheric deposition - AIRPACT-5 (Air-quality forecasting for the Pacific Northwest). Imagery showing monthly deposition of nitrogen and sulfur. Civil & Environmental Engineering (WSU-Pullman). <http://lar.wsu.edu/airpact/>
- Mineralization from manure – Sullivan, 2020. EM 8954-E Estimating Plant-available Nitrogen from Manure, OSU Extension. <https://catalog.extension.oregonstate.edu/em8954>
- Soil Nitrogen Mineralization – Sullivan, 2020. EM 9281 Baseline Soil Nitrogen Mineralization: Measurement and Interpretation, OSU Extension.
 - This publication provides a healthy discussion of the challenges in estimating nitrogen mineralization from soil samples. Authors conclude that “most laboratory tests for N mineralization are useful only as measures of relative changes in soil health.”

Application Rates

In order to accurately know how much nutrients are being land applied, a rate (application per unit time measurement) for any land application equipment (equipment calibration). It is essential that the rate of application is known in order accurately apply the nutrient budgets. Only basing application rates on a rough estimate is a quick way to break a nutrient budget and end up with either too much or not enough nutrients applied to a field.

Application Restrictions

The permit prohibits land application during certain times of year when fields are either bare of crops or crops are dormant, which is usually indicated by bare, frozen, snow covered, or saturated fields. The technical basis for the permit’s nutrient budget requirement is to land

apply nutrients so that they are available when crops need them and are able to use the nutrients, which is consistent with AKART and minimizes the risk of discharging excess nutrients to waters of the state. Also, if nutrients are land applied when the risk of nutrient loss is high or when crops are unlikely to take up the nutrients, land application may be considered disposal. Land application that is waste disposal requires a solid waste handling permit. See the previous section on [meeting the beneficial use definition](#).

Specific prohibitions on land application were drawn from guidance documents provided by NRCS and Whatcom Conservation District. The following requirements are paraphrased from the most recent State NRCS Practice Standard 590.

In the draft permit, nutrients must not be land applied:

- To fields with a frozen surface crust or deeper, or the soil is at or below 32 degrees F.
- To fields that are snow covered.
- During precipitation events large enough to cause field run-off in the Permittee's location.
- When crop nutrient utilization has stopped or is limited (e.g. no application to perennial grass crops before spring green-up)

The following requirements in the draft CAFO permits are based on the Whatcom Conservation District Application Risk Management guidance (2016). Nutrients must not be land applied:

- To fields with saturated soil (including surface ponding) or with soil moisture content \geq 90%.
- If the water table is within 12 inches or less of the surface.
- If significant precipitation (\geq 0.5 inches) is forecast in the next 72 hours by WSU AgWeatherNet or NOAA for the Permittee's location.

The permit conditions limiting land application during certain times are the same between the state permit and combined permit. This is because the same activity will take place under both permits.

Double Cropping, Winter Cover Crops, Perennial Crops

Following the permit requirement and technical assistance agencies agreement that a nutrient budget is necessary, and the reason for the nutrient budget is to appropriately land apply various sources of nutrients, land application may only occur when the nutrient budget says that crops will need the nutrients. Land application outside of when the nutrient budget says that the crops will need the nutrients would then not be following the budget. Permit condition S4.J.4 requires Permittees justify why land application needs to occur outside of when the nutrient budget says crops will need the nutrients, for example after crops have been harvested or when they are beginning to go dormant and why the nutrients currently available in the field soils are not enough for the non-growing (or limited growth for perennial crops) period. This

condition provides additional oversight to land application that takes place during times when crops have already been harvested, or are going into the non-growing season by ensuring that the crops actually do need extra nutrients that will not be provided by the soil.

Emergency Application

The permit restrictions on the time and place that land application may occur are intended to ensure compliance with AKART and reduce land application during times where there is a high risk of discharge that could cause or contribute to violations of surface or groundwater standards. Permit condition S4.J.5 is meant to address situations where land application during the restricted period involves less risk than an event such as waste storage pond overtopping. The noncompliance procedures in this section are slightly different than those in special condition S7.E because the Permittee has advanced knowledge of the noncompliance. By requiring advanced notification to Ecology or Agriculture, the State can provide timely technical assistance to ensure the safest land applications possible.

After the emergency application, the 6-month reporting requirement defines the point by when the Permittee and Ecology evaluate whether the facility is appropriately designed for current operations. Ecology expects the permittee to define the problem that led to the noncompliance, research options, and chose actions that prevent the noncompliance in the future. The action plan must be implemented within the time-frame stated in the permit.

However, the yearly field nutrient budget does require calculating the phosphorus needs for the crop. This will allow Ecology to gather information for the next permit cycle to better determine if, and how phosphorus needs to be addressed.

- i. Allow for phased implementation of phosphorus based nutrient management.

This permit cycle, nitrogen is the focus of the field nutrient budgets and MPPP as it is currently the primary nutrient of concern (e.g. high nitrates in groundwater in Yakima and Whatcom Counties). It is highly likely that if Ecology were to require phosphorus based nutrient budgets that many land application fields would no longer be available to use for manures due to the current phosphorus levels from many years of receiving manure.

Proposed Revisions

Ecology reorganized the list of required elements in a nutrient budget in S4.K.1. They are now grouped into stocks, sources, and sinks. Ecology also added the requirement to nutrient budgets that plant available nitrogen not exceed the nitrogen required to reach a crop's estimated yield. This makes clear that the budget must be balanced for available nitrogen. This was included in the provided nutrient budget worksheet developed for the previous permit, but not explicitly stated in the permit language.

In S4.K.3, Ecology is proposing to restrict land application to not just when the near surface soil profile is saturated, but when forecast precipitation will exceed the infiltration rate. This restriction is meant to limit the occurrence of land application discharges due to precipitation

that falls on top of an application that has not been incorporated into the soil. Ecology and WSDA have observed that this can occur 2 to 5 days after the application.

Ecology made changes to special condition S4.K.4 on land application procedures for double cropping, winter cover crops, and perennial crops. These changes improved readability, and clarify the requirement to evaluate soil nitrogen changes, but did not change previous permit requirements.

Similar improvements were made for readability to the Emergency Winter Land Application conditions at S4.K.5. Requirements were also formatted into a list to make clear the steps a permittee needed to take to comply with the condition. The requirement to collect a water sample when a discharge occurs was added. Discharges, authorized or unauthorized, must be monitored per 40 CFR § 122.44(i)(1)) and may be required under WAC 173-226-090(1). To provide clarity in requirements and prevent reoccurring emergency applications, Ecology is establishing a deadline, for which the work proposed in the work plan must be completed. The proposed deadline is 18 months after the first occurrence of an emergency application and is similar to the requirement for storage structure repairs conducted in accordance with S7.C. If work cannot be completed within 18 months, the permittee may request a time extension by preparing a rationale and work schedule. This request must be submitted to Ecology and a public noticed published. Time extensions are considered modifications of permit coverage.

Ecology is proposing to incorporate these revisions in both the Combined and State-only permits. These revisions are consistent with AKART and will ensure that manure applications are made at the right applications rate and at safe times when the risk to water quality is lower.

L. Adaptive Management of Land Application Fields

This permit condition uses a systematic, iterative adaptive management program to continually adjust management of a complex soil-plant-manure system. The slow and fast processes of making nitrogen available from carbon-rich manure depend not only on the manure characteristics, but soil and climate conditions. The adaptive management actions in this permit condition are meant to direct the permittee to adapt their land management plan based on recent data from their fields.

In the previous permit, Ecology developed the adaptive management matrix that assigns risk levels based on the nitrate concentration in a soil sample collected in the late summer or early fall after harvest. The soil nitrate thresholds in the permit and in **Error! Reference source not found.** below, are the same thresholds used by WSDA with dairy producers under chapter 90.64 RCW. These thresholds were based on the interpretive guidance for post-harvest soil nitrate tests first developed by University Extension researchers in Washington, British Columbia, and Oregon. The current extension publication titled “Postharvest Soil Nitrate Testing for Manured Grass and Silage West of the Cascades” (Sullivan et al, 2021a) provides historical background on the development of the test and interpretive guidance. For a summary of the recommended

soil nitrate threshold limits in the scientific literature that Ecology reviewed, see Table 7 in “Manure and Groundwater Quality Literature Review” (Redding, 2016).

Table 1 Field Risk Level

Field Risk Level	Fall Soil Test Nitrate Range in ppm	Fall Soil Test Nitrate Range in lbs/acre
Low	Less than 15	Less than 55
Medium	15 - 30	55 - 110
High	31 - 45	111 - 165
Very High	More than 45	More than 165

The risk levels are simplified interpretations of the post harvest nitrate soil data and the way Ecology determines adaptive management actions for the permittee. The higher the risk level, the greater the effort level the permittee must take in adjusting their cropping and management practices.

The postharvest soil nitrate data and the risk level categories are not intended to forecast the impact on groundwater. Nor do the results point to the cause of the excess soil nitrate. Rather, the researchers who proposed the post-harvest soil nitrate test (Sullivan and Cogger, 2003) developed it as a tool for evaluating past manure management practices (Redding, 2016). Ecology uses the soil test as a tool for guiding permittees when management practices need to be adjusted.

The amount of residual N left in the field is an indication of whether cropping and manure management practices needs to be adjusted. The first time a field is categorized as Medium, High, or Very High risk, the permittee must adjust their management practices according to the actions prescribed in the column titled “Required Actions after 1 year”. Each increased risk level leads to additional management actions. This suite of management actions were first developed for the 2017 permits and were based on University Extension guidance for nutrient management (Sullivan et al, 2021a; Sullivan et al, 2021b, Bary et al, 2016), discussions with producers and their technical advisors, and public comment on the 2016 draft permits. These actions and thresholds will satisfy AKART and prevent violations of water quality standards. Most of the actions involve revising the nutrients budgets that are required in special condition S4.J.1 Annual Field-Specific Crop Nutrient Budget.

The goal after one year of being in the High or Very High risk level is to reduce fall soil nitrate concentrations in land application fields to a risk level of Medium or less. Where that does not occur, the permittee must again follow the same actions in the column titled “Required Actions after 1 Year” and must follow the additional actions in the column titled “Required Actions after 2 Consecutive Years”. These actions involve hiring a professional with expertise in agronomy to

assist the permittee in preparing a nutrient budget and recommending application rates. The permittee must also reduce or stop nutrient applications depending on the field's risk category.

Ecology added a new requirement for fields categorized as Very High for the second year in a row. Permittees must collect deep soil samples, analyze them for nitrate concentration, and submit them to Ecology. Ecology will use the soil samples, along with site-specific data on groundwater recharge rate and climate in an analysis of the reasonable potential to impact groundwater. Ecology developed a mass balance loading model for this purpose (Pitz, 2014). When there is evidence of a reasonable potential to impact groundwater, Ecology will contact the Permittee to begin developing a groundwater monitoring plan according to S5.D Groundwater Monitoring.

The adaptive management program in the draft CAFO general permits utilizes the concepts of benchmarks similar to those used in Ecology's Industrial and Construction Stormwater general permits. The use of monitoring against a benchmark to drive changes in management practices to prevent discharges that may cause or contribute to violation of water quality standards is, in total, a narrative water quality-based effluent limitation. A benchmark itself is not a numeric effluent limit, i.e., it is not a violation if it is exceeded; it is an indicator value that, when reached or exceeded, requires the Permittee to change their application practices to reduce future end of season reporting values to below the benchmark. That is, reaching or exceeding a benchmark triggers the permit requirement to change how the field is managed. If a Permittee exceeds a benchmark and does not take the permit-required adaptive management actions, that would constitute a permit violation.

When Ecology is concerned about a potential over-application of nutrients and the associated risk to groundwater, we use multiple pieces of information from permittees to assess whether field applications are made at agronomic rates. Fall soil nitrate-nitrogen test results are only one piece of information that may be used to make a determination. We may consider field-specific nutrient application rates, budgets, and crop yield data submitted with post-harvest soil nitrate test results. Inspectors may review individual nutrient application records on-site and equipment maintenance records.

Proposed Revisions

Several changes were made to this permit condition to improve clarity for implementing the permit's adaptive management program. Ecology partitioned the adaptive management program into three steps. A copy of **Error! Reference source not found.**, above, was introduced to the permits as Step 1: Determine Field Risk Level.

The management action tables used in the previous permit were split into two tables, one for each climate type, and referenced in Step 2: Take Required Adaptive Management Actions. This formatting change makes it easier to determine the depths needed for additional soil samples. Ecology shortened the number of consecutive years that require additional action in response to [Wash. State Dairy Fed'n v. Dep't of Ecology](#) (2021).

Step 3: Submit Deeper Soil Test Results was added to explain how the permittee must collect additional soil samples for an assessment of potential impact to groundwater. After 2 consecutive post-harvest soil nitrate test results of more than 45ppm (Very High risk level), the permittee must collect deep soil samples for a groundwater impact analysis.

Deeper soil samples must be collected and analyzed to assess the potential impact to groundwater quality from nutrient applications on these fields. Ecology will review the soil tests results and determine if there is a potential to impact groundwater quality using the mass balance loading model developed by Ecology (Pitz, 2014). If Ecology determines the activity causes or contributes to a violation of water quality standards, we will notify the permittee in writing that they must submit a groundwater monitoring plan according to special condition S5.D.

Authority to include these requirements is based upon 40 CFR 122.44(i) and WAC 173-226-090. These changes are made in response to [Wash. State Dairy Fed'n v. Dep't of Ecology](#) (2021).

M. Irrigation Water Management

Irrigation is necessary in many areas of the state to provide water to growing crops. However, when improperly managed, irrigation water contributes to the movement of pollutants such as nitrate to groundwater, which is not consistent with AKART requirements in Chapter 90.48 RCW and could cause or contribute to violations of water quality standards. Nitrate is quickly mobilized in soil water and, when the soil's water holding capacity is exceeded, at risk of moving below the rooting depth of a crop. When nitrate is out of reach of the crop's roots, over time it will likely reach groundwater. See the discussion of nitrogen in the Wastewater Characterization section of this Fact Sheet for more on nitrogen transport and transformation.

Proposed Revisions

Ecology amended this condition to require that irrigation water be managed such that the water holding capacity of soil not exceed the crop root zone (approximately 8 inches to 4 feet depending on crop and location in the state). Exceeding the water holding capacity leads to leaching. Ecology received feedback that crops with deep roots are being increasingly used in irrigated areas. The revisions allow use of deeper rooting crops, which are useful in repairing fields after a history of overapplication of N. This revision satisfies AKART requirements for land treatment systems.

N. Field Discharge Management Practices

This condition in the permits serves to protect waters adjacent to land application fields. When there is space between fields with manure applications and the down gradient surface waters, the impact of polluted runoff to surface and groundwaters is reduced. Nutrients, bacteria, and sediments in the runoff, are intercepted, infiltrated, or treated depending on the soil, climatic, and vegetative conditions.

Ecology expects that the CAFO operator will seek technical assistance from Ecology, WSDA, Conservation Districts, NRCS, and other water quality professionals to determine which options work best for their fields. The permits are designed so that, as a whole, runoff on land application fields does not cause or contribute to exceedances in water quality criteria. The discharge management practices required by this permit condition are an operator's last line of defense. Source control measures such as yearly nutrient budgeting (special condition S4.J.1), manure testing (special condition S4.H), and application timing (special condition S4.J.3) prevent the contamination of surface runoff.

Animal access in the field edges that are meant to filter or treat runoff will impact their function in pollution prevention. Therefore, animals must be excluded from field discharge management practices adjacent to surface waters. Ecology outlined how field staff evaluate streamside cover and document site conditions that we know contribute to water pollution in [Clean Water and Livestock Operations: Assessing Risks to Water Quality](#)³⁰ (Publication 15-10-020)

Compliance Options in Combined Permit

The Combined permit presents four options—riparian management zones, vegetated filter strips, application setbacks, and earthen berms. These options ensure compliance with AKART requirements in Chapter 90.48, and prevent discharges that may cause or contribute to violations of water quality standards.

Riparian Management Zones

Protecting stream and riparian areas is an important and holistic management practice for water quality protection. While a clear identification of stream and riparian area boundaries is difficult because these areas are not fixed in time and space, as used here riparian management zones are intended to refer to the stream channel, and the transition zones between upland areas and surface water.

Healthy riparian management zones generally contain a combination of native trees, shrubs, woody debris, riparian vegetation, litter layers, and soils. The design, construction, and maintenance of a riparian management zone are more complex than the vegetated buffer and manure setback options as they are intended to protect water quality and provide habitat for fish and wildlife. The plants and soils in the riparian management zone filter and reduce incoming sediments and pollutants in runoff from land application fields. Vegetation in riparian management zones shade streams maintaining cool temperatures needed by most fish. Plant roots stabilize stream banks and control erosion and sedimentation. Riparian vegetation moderates stream volumes by reducing peak flows during flooding periods and by storing and slowly releasing water into streams during low flows. Permittees interested in utilizing this option should refer to [Appendix J: Restoration and Planting of Ecology's State Fiscal Year 2023](#)

³⁰ <https://apps.ecology.wa.gov/publications/SummaryPages/1510020.html>

[Funding Guidelines—Water Quality Combined Funding Program](#)³¹. Permittees may qualify for financial support if they chose to implement this management practice.

Ecology is developing detailed guidance in [Voluntary Clean Water Guidance for Agriculture Chapter 12: Riparian Areas](#)³².

Vegetated Filter Strips & Manure Setbacks

Vegetated filter strips are areas of dense vegetative cover such as grass and shrubs that slow run-off and filter out nutrients and other contaminants. Manure setbacks are a specified distance from surface waters or potential conduits to surface waters where manure, litter, and process wastewater may not be land applied.

Federal requirements at 40 CFR part 122.42(e)(1)(vi) and 40 CFR § 412.4 specify that permittees must implement best management practices to control nutrient runoff. Specifically, Large CAFOs must use a 100-ft manure setback from surface waters or conduits to surface waters, a 35-foot vegetated buffer, or an equivalent alternative. Federal requirements at 40 CFR § 412.4(c)(5)(ii) state that the alternative must be equivalent or better in pollution reduction as the 100-ft manure setback. Ecology chose to retain these as options for controlling nutrient runoff to surface waters.

Berms

If properly designed to account for the field characteristics (e.g. slope, infiltration), environmental conditions (e.g. precipitation, storm events), and land application practices (e.g. method of land application, form of manure, litter, or process wastewater applied), berms prevent run-off leaving from a field. Berms may be used to redirect runoff away from surface waters or conduits to surface or groundwater. Ecology will verify the siting and orientation of berms at the time of permit coverage or modification. This option is based upon a best professional judgment determination that in appropriate circumstances, berms are equivalent or better in pollutant reduction than the 100-foot manure setback.

Alternative Compliance Practices

Permittees may propose alternative compliance practices that are equivalent or better in pollution reduction than the 100-ft manure setback. This equivalency requirement comes from CFR § 412.4(c)(5)(ii). Permittees considering an alternative practice should seek early technical assistance from Ecology, WSDA, Conservation Districts, NRCS, or other water quality professionals. Maps of the proposed locations for the alternative practices and documentation demonstrating equivalency must be provided in the MPPP that is submitted with the permit application. If a permittee wishes to propose an alternative compliance practice after they

³¹ <https://apps.ecology.wa.gov/publications/SummaryPages/2110028.html>

³² <https://ecology.wa.gov/About-us/Accountability-transparency/Partnerships-committees/Voluntary-Clean-Water-Guidance-for-Agriculture-Adv>

receive coverage, they must apply for a permit modification and public notice their modified application.

Proposed Revisions to Combined Permit

Ecology modified this condition to present the discharge management practices as a list of options that allows the permittee to select the most appropriate option for the field and waterbody. The riparian management zone option was added to identify a practice with water quality benefits beyond pollutant control, such as habitat, that a vegetated filter strip may not provide. Riparian management zones are site-specific designs for which management actions are tailored to maintain specific resource objectives. All of the practices, including the new riparian management zone, are equivalent or better in pollution reduction to surface waters as the 100-ft manure setback.

Ecology clarified in the draft permits that animals must be prohibited from the field discharge management areas established in special condition S4.M. Animal access in the streamside areas that are meant to filter or treat runoff will impact their function in pollution prevention. Ecology outlined how field staff evaluate streamside cover and document site conditions that we know contribute to water pollution in [Clean Water and Livestock Operations: Assessing Risks to Water Quality](#)³³ (Publication 15-10-020).

Ecology removed the public notice template from the alternative compliance practice option. An alternative compliance practice must be proposed through an initial permit application or an application for permit modification. Both actions involve public notice of the application package under the combined permit.

Requirement in State-only Permit

In the State-only permit this condition is titled “Field Discharge Prevention” to reflect that surface water discharges are not authorized under the State-Only permit. A facility with the State-only permit must use technologies, infrastructure, and practices that will prevent contaminated discharges. To achieve compliance, permittees should consider multiple complementary practices such as structural BMPs that reduce stormwater runoff volume or peak flows, treatment BMPs that remove pollutants, and management BMPs that exclude stormwater from manure. Permittees should consult recommended BMPs from [Ecology’s Voluntary Clean Water Guidance for Agriculture](#)³⁴, [Stormwater Management Manuals](#)³⁵, or conservation practice standards in the [Natural Resource Conservation Service \(NRCS\) Field Office Technical Guide \(FOTG\)](#)³⁶.

³³ <https://apps.ecology.wa.gov/publications/SummaryPages/1510020.html>

³⁴ <https://ecology.wa.gov/About-us/Accountability-transparency/Partnerships-committees/Voluntary-Clean-Water-Guidance-for-Agriculture-Adv>

³⁵ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals>

³⁶ <https://efotg.sc.egov.usda.gov/#/state/WA>

Underground drains, such as tile drains that work to manage water in-field and outfall to surface waters, must be managed in a way to prevent the discharge of manure, litter, wastewater or organic by-products. Permittees may consider capping tile drains or adding additional treatment BMPs. If untreated tile drain water discharges to surface waters, Permittees may be required to apply for coverage under the Combined permit.

If there is a technology or practice that the permittee wishes to use that isn't included in either of the referenced resources, then the permittee must document the technical basis for the practice and provide this information to Ecology for approval with their application for permit coverage.

Proposed Revisions to State-only Permit

Ecology modified this condition to provide additional direction on complying with the surface water discharge prohibition on land application fields in response to [Wash. State Dairy Fed'n v. Dep't of Ecology \(2021\)](#).

As with the Combined Permit, Ecology clarified that animals must be prohibited from the field discharge prevention areas established in special condition S4.M.

O. Manure Export

Ecology is not proposing changes to S4.O.

Export is a way for an operation to remove excess nutrients from its facility when the facility produces more nutrients than its cropping system can use. Ecology has purposely chosen to use the term **export** instead of "transfer" (as used in 40 CFR § 122.42(e)(3)) of waste from one entity to another to provide a distinction between permit requirements and the NRCS Waste Transfer practice (Practice 634).

These requirements are based upon 40 CFR § 122.42(e)(3)). However, because export is used on all types of CAFO facilities, these requirements are included in both the state and combined permits.

Properly exported nutrients are no longer the responsibility of the Permittee. Export requires the Permittee to relinquish control of the manure, litter, digestate, or process wastewater to another party. Whether the Permittee delivers the manure, litter, and process wastewater, or the receiving party picks it up from the Permittee, until the control of the waste changes hands, the Permittee is responsible for managing the manure, litter, and process wastewater in a manner that prevents discharges. Examples of when export (and therefore control changing hands) occurring are provided in the permit. These are intended to clarify Ecology's position as to who the responsible party is should waste be discharged during the process of exporting waste. Examples of when waste export occurs, include, but are not limited to:

1. After the Permittee has completed delivery of waste to storage facilities of another party. In this case, if the Permittee is using its equipment to deliver waste, the receiving

party has no control over the waste until it is delivered. Because the Permittee maintains control until that point, it is still responsible if there is a discharge until each delivery is completed and control changes to the receiving party.

2. Another party picks waste up from the Permittee. The waste does not get applied to any fields the Permittee controls. In this case, the Permittee is in control of the waste until the waste is loaded into the receiving party's equipment and is off the Permittee's facility. Until that occurs, all permit requirements apply.
3. When a Permittee applies waste to a field, or fields, at the request of the person in control of the field. In this case, the Permittee is applying waste it controls to a field that it does not control. While waste application (and incorporation if supplied by the Permittee) is occurring, the Permittee is responsible for ensuring that there is no discharge from the field. The Permittee is also responsible for applying the amount and rate of manure, litter, or process wastewater specified by the person in control of the field. Once the application of manure, litter, or process wastewater is complete, then the transfer occurs because the Permittee is no longer in control.
4. A Permittee as a custom applicator. At times, a Permittee could apply manure, litter, or process wastewater not generated at the Permittee's facility to fields that another party controls. In this case the Permittee would be regulated for discharges the same as a non-permitted custom applicator. If the party in control of the field is another livestock operation (e.g. AFO), a discharge could result in that party being required to apply for CAFO permit coverage.

As part of the waste export process, the Permittee is required by 40 CFR § 122.42(e)(3) to provide the waste recipient with the most recent manure nutrient analysis. The Permittee must keep records of the date, waste recipient name, address, parcel the manure, litter, and process wastewater will be applied to and the approximate amount of water transferred to the recipient.

Another process is used by some producers where export takes place on the facility before manure is moved off-site. In this situation another party (contracted composter for lack of a better term) processes ("composting" or drying) manure solids on-site and then sells the processed manure solids for various purposes. The export occurs when control of the manure solids changes from the Permittee to the contracted composter even though the contracted composter is operating on the Permittee's facility. In order to ensure whole-facility nutrient balance, the amount of manure exported to the contracted composter must be tracked by the Permittee. However, even though the exported manure is still on-site, control has changed hands so any sales or movement of the processed manure off-site is not required to be tracked by the Permittee.

For those that are exporting digestate from digesters, nutrient analysis is required within the last 5000 cubic yards generated (WAC 173-350-250(2)(a) Table 250-A (3) and WAC 173-350-220(1)(b) Table 220-A (3-5) and WAC 173-350-220(4)(a)(x)(B)).

P. Emergency Procedures

Part of preventing and controlling discharges is planning for emergency situations when infrastructure fails. All emergency situations are not expected to be covered in the plan. What is expected is that the Permittee will consider the types of infrastructure failure that are likely to happen. Based on the types of possible failures, develop a general plan of how to deal with the problem. (WAC 173-226-070(3)). For example, if a pipe on the production area bursts the plan is to shut off flow to the pipe (bypassing with temporary pipe if necessary) until the pipe is repaired.

Proposed Revisions

The draft permits added the requirement for emergency procedures to include discharge sampling. Procedures for discharge sampling are in special condition S5.E Surface Water Monitoring.

Q. Training

Ecology is not proposing changes to S4.Q.

Ensuring facility infrastructure is maintained and problems are corrected promptly is a way of ensuring that discharges from the facility beyond those allowed by the permit do not occur. Visual inspections (i.e. monitoring) is a way to do this.

This permit condition was included to suggest a possible avenue for how visual inspection of the facility may be integrated into the work the Permittee and their employees are already performing, thus reducing the burden on the permitted facility. Visual inspection does not have to be separate from daily tasks. During routine work, the Permittee and their employees could look for the inspection items required in permit condition S5.A. If a problem is noticed as the Permittee or employee is performing their routine work, it could then be reported to the Permittee or designated individual during or after shift via a record sheet. If no problems are noted, a checkbox on the record sheet to this affect could be used.

S5. MONITORING

Ecology has the authority to require monitoring deemed reasonably necessary to ensure permit compliance(WAC 173-226-090). Monitoring is usually associated with collection and analysis of a discharge, for example monitoring effluent from a pipe. CAFOs covered under these permits however, do not have a continuous discharge to monitor. Monitoring for permit compliance on CAFOs should be in the form of facility inspections and sampling and nutrient analysis necessary to make safe nutrient applications. Permittees are required to keep records of monitoring activities for a minimum of five years (special condition S6), and periodically report the results to Ecology (special condition S7).

A. Operating and Maintenance

Ecology is not proposing changes to S5.A.

This condition requires the permittee to conduct routine, visual inspections of facility infrastructure and is important to identifying potential pollution issues early, before an unauthorized discharge occurs. The routine visual inspections are based on 40 CFR §412.37 and 412.47, which require large CAFOs to perform routine, visual inspections. The requirements and facilities are similar enough that Ecology requires all Permittees, as a good practice, to perform the same routine inspections. State regulations (WAC 173-226-070(3)(d)) allow Ecology to impose additional requirements to prevent or control discharges from spillage or leaks or materials handling or storage.

B. Manure, Litter, Process Wastewater, and Other Organic By-Products

This condition requires nutrient sampling be conducted according to the referenced university guidance and analyzed for the listed parameters. The permittee uses the results in preparing and following the field-specific nutrient budget (special condition S4.J), retains the records for five years (special condition S6), and reports the data to Ecology annually (special condition S7).

In order to know the amount of nutrients that should be applied to a crop field, the amount of nutrients in the various sources that will be used must be known (along with crop nutrient needs and nutrients already available in the soil). Sampling and analysis of nutrient sources provides this information.

In order to ensure that Permittee's appropriately calculate the amount of nutrient that they will land apply, sampling and testing of all the nutrient sources used by the Permittee is being required. Nutrient sources are the manure, litter, process wastewater, digestate, chemical fertilizer or other nutrient sources generated on site or imported to a facility. Chemical fertilizers have a certified nutrient analysis provided on the product container so they are not required to be sampled and tested.

The amount of nutrients contained in waste is going to depend on type of manure, method of collection and storage, kind and amount of bedding or litter used, and amount and type of feed. This is going to be different for every operation.

Book values are estimates but do not take into account differences between operations. Different herds, weather, storage, and local soil conditions all influence the amount of nutrients in the various sources. Because of these variations, book values are not accurate for determining field nutrient balances and land application amounts.

There are two options for sampling waste that is going to be land applied. One option is to sample the waste while it is still in storage. The other is to sample what is actually being land applied at the time of application.

Both options present difficulties. The option of sampling the stored manure, litter, and process wastewater means that when actually applied it is likely to have a different nutrient content due to the handling/application process. However, this option provides a nutrient analysis upon which a land application amount may be determined.

Sampling during the actual application provides a more accurate representation of nutrients applied to a field. The downside is that the application rate is a guess. Actual nutrient analysis is completed sometime after application if finished. This may not be an issue early in the season, but may be during later season applications and may cause the Permittee to exceed the amount of nutrients needed on a field.

Handling waste generally causes the more volatile compounds to volatilize (e.g. ammonia). One assumption that may be made is that the amount of nutrients stored in the waste storage pond will actually be higher than what is applied on a field (losses can be roughly between 15 and 80% of volatile nutrients during land application). This over-estimates the amount of nutrients that are applied. This is a more conservative approach to land application. The Permittee may sample during waste application or more frequently as well if it chooses, but for permitting purposes, the Permittee must sample the waste stored in its pond.

The parameters chosen to be included in sample analysis are the minimums necessary to develop a field nutrient budget. 40 CFR § 122.41(j)(4) requires that Ecology use analysis methods included in 40 CFR § 136 unless another method is required by 40 CFR subchapters N or O.

Guidance for appropriate methods for gathering samples varies. Ecology has chosen to use university guidance documents PNW 570-E, EM 8832-E, PNW 533, and PNW 673.

Rationale for inclusion in State Permit

WAC 173-226-090(1) requires that discharges authorized by a general permit be subject to monitoring requirements. Generally this applies to discharges, however land application is a slightly different case. Because discharges to ground are being authorized by the permit, the amount of nutrients being discharged to ground must be monitored instead of the actual

discharge itself. This plus crop nutrient uptake (crop yields) and other information required by the permit provide the ability to analyze (at least in a gross fashion) how much nutrients are being discharged to ground and eventually groundwater.

For consistency between the two permits, the required parameters are the same. The land application taking place under both the state and combined permits are the same, so it is reasonable to ensure that the monitoring requirements are also equivalent. This also allows comparisons between the activities taking place under both permits to provide a broader set of data to better understand impacts from the permitted activity.

Rationale for inclusion in Combined Permit

In addition to the requirements of WAC 173-226-090, 40 CFR § 122.42(e)(1)(vii), 40 CFR § 412.37(b) and (c), and 40 CFR § 412.47(b) require monitoring. Both state and federal monitoring requirements are incorporated. As stated above, Ecology is aligning monitoring requirements between the state and combined permits.

Proposed Revisions

The draft permit proposes to substitute a different nitrogen parameter – Total Kjeldahl Nitrogen (TKN) – for the organic nitrogen parameter. Currently no laboratories are accredited for the organic N method by Ecology. The same information about nitrogen content can be obtained from the three parameters, nitrate, ammonia, and TKN. TKN is the total concentration of organic N and ammonia. Total N is the combination of TKN and nitrate. Therefore, if a permittee wished to use organic N or TN in their nutrient management planning, they can calculate it from the parameters proposed.

Ecology made formatting changes to the nitrate and ammonia parameters and updated the webpage URLs.

C. Soil Monitoring

This condition requires soil sampling be conducted according to the referenced university guidance and analyzed for the listed parameters. The permittee uses the results in preparing field-specific nutrient budget and assessing management practices (special condition S4.J and S4.K), retains the records for five years (special condition S6), and reports the data to Ecology annually (special condition S7).

In order to develop a balanced nutrient budget for a crop, the operator needs to know the amount of nutrients available in the soil. Regular sampling and analysis of field soils provides this information. The parameters chosen to be included in sample analysis are the minimums necessary to develop a field nutrient budget. Ecology is also somewhat constrained by the type of analysis it can use for permit requirements. 40 CFR §122.41(j)(4) requires that Ecology use analysis methods included in 40 CFR § 136 unless another method is required by 40 CFR subchapters N or O. Some parameters such as total nitrogen do not have approved methods.

However, the components of total nitrogen, nitrate + nitrite and total kjeldahl nitrogen, have Part 136 methods.

Guidance for appropriate methods for gathering samples varies. Ecology has chosen to use the university guidance documents PNW 570E and EM 8832E.

The parameters that must be analyzed are the same for both permits. The type of activities taking place under both the state and combined permits are the same, so it is reasonable to ensure that the monitoring requirements are also equivalent. This also allows comparisons between the activities taking place under both permits to provide a broader set of data to better understand impacts from the permitted activity.

In addition to the requirements of WAC 173-226-090, 40 CFR 122.42(e)(1)(vii), 40 CFR 412.37(b) and (c), and 40 CFR 412.47(b) require monitoring. Both state and federal monitoring requirements are incorporated. As stated above, Ecology is aligning monitoring requirements between the state and combined permits.

Proposed Revisions

The draft permit proposes to substitute a different nitrogen parameter, Total Kjeldahl Nitrogen (TKN), for the Ammonia-N/Ammonium-N parameter. In soils with high organic matter and fields receiving organic forms of N, a plant available form of N may be released over time. To estimate how much soil N may be made available to plants during a growing season, an estimate of the total N content is best. Total N can be calculated from the two N parameters proposed in the draft permits, TKN and nitrate-N. TKN is the total concentration of organic N and ammonia. Total N is the combination of TKN and nitrate.

Ecology made formatting changes to the nitrogen parameters and updated the webpage URLs. Changes were also made to clarify that the monitoring schedule requirements are located in special condition S4.I.

D. Groundwater Monitoring

Permits require the permittee to measure the discharge, as opposed to the receiving water. Permits and Permittees must also assure compliance with water quality standards. To do this, we use best management practices and monitoring of discharges.

In some instances, monitoring the discharge is difficult. On land treatment sites, the fate and transport of pollutants in the vadose zone is complex and site-specific. As [Ecology's Guidance on Land Treatment of Nutrients, Wastewater, with Emphasis on Nitrogen](#) indicates, monitoring may be required for waste water, soils, crops, and ground water.

Ecology's permitting approach in this permit cycle is to establish assessments of CAFO activities and use those to determine if there is a reasonable potential to impact ground water quality. Where there is early indication of a potential to cause or contribute to a violation of water quality standards, we require Permittees to follow the procedures in special condition S5.D.

Routine monitoring of an impact to groundwater is required when a groundwater evaluation confirms a potential impact. This permit condition is a procedure that Permittees must follow when directed to by assesment results in other parts of the permits.

Installing a groundwater monitoring network is a multi-step project. In special condition S5.D Ecology has broken the project up into five phases:

1. Developing the work plan
2. Implement the work plan
3. Report results
4. Install network
5. Begin quarterly monitoring and reporting

These phases were based on the guidance in [Ecology's Implementation Guidance for Groundwater Quality Standards](#)³⁷. Permittees must develop and receive Ecology approval on a work plan for evaluating impacts to groundwater. The groundwater evaluation must be submitted to Ecology and if the results confirm an impact to groundwater, the Permittee must install a monitoring network and begin quarterly monitoring of the parameters listed in Table 10. The groundwater monitoring parameters and sample types were based on guidance in [Ecology's Implementation Guidance for Groundwater Quality Standards](#)³⁸

Before monitoring for the parameters listed in Table 10 begins, the Permittee must notify Ecology so that electronic DMR submittals can be turned on in the reporting website, WQ Portal.

Proposed Revisions

Ecology is proposing to include the details on the steps required by the Implementation Guidance for Groundwater Guidance. We expect this will help permittees in planning should they be required to conduct groundwater monitoring activities. Authority to include these requirements is based upon 40 CFR 122.44(i) and WAC 173-226-090. These changes are made in response to [Wash. State Dairy Fed'n v. Dep't of Ecology](#) (2021).

E. Surface Water Monitoring

If any surface water discharge occurs from the production area, whether authorized or not, the permittee must collect grab samples representative of the discharge, analyze samples, and record an estimate of the volume of material discharged.

Permittees with coverage under the Combined permit must collect discharges to surface water from land application areas unless all the following are true:

³⁷ <https://apps.ecology.wa.gov/publications/SummaryPages/9602.html>

³⁸ <https://apps.ecology.wa.gov/publications/SummaryPages/9602.html>

1. The discharge was generated by precipitation,
2. The discharge was not from the production area,
3. The discharge was not caused by human activities (e.g. land application, irrigation) even if the activity took place during precipitation, and
4. The CAFO was operating in accordance with their site-specific nutrient management plan and maintains records demonstrating compliance.

If the above conditions are met, then a precipitation related surface water discharge from a land application field is agricultural stormwater and permittees do not need collect a sample.

Dry weather discharges are never considered agricultural stormwater. See the previous section in this fact sheet for a longer discussion on [agricultural stormwater](#).

Examples of surface water discharges that permittees must collect from:

1. Any discharge of pollutants from the production area.
2. Discharges from overflowing waste storage structures.
3. Discharges resulting from land application that occur during dry weather, including those from tile drains.
4. Stormwater discharges that do not meet the definition of agricultural stormwater.

In most cases, Ecology expects that grab samples will be collected directly from the overflow point from a manure storage structure or the production area before it reaches surface waters such as a ditch or stream. Subsurface discharges to surface waters, such as through drain pipes or tile drains, should be collected from the outfall. It is not always possible to sample runoff in locations such as ditches or pipes where the flow is channelized. Sometimes the permittee may need to sample sheet flow before it is channelized or reaches the receiving water. Approaches to sampling sheet flow are described in [Ecology's Stormwater Sampling Manual: A guide for the Industrial Stormwater General Permit](#)³⁹. This manual was developed for implementatino of the Industrial Stormwater General Permit, but permittees may find the guidance helpful.

Discharges that are continuous for several days must be monitored until they stop. When a discharge occurs over multiple days, Ecology expects multiple samples to be collected. At a minimum, there should be one sample per day.

When conditions are unsafe for sample, for example during a flood event, the special condition S5.E directs the permittee to record basic information about the discharge and notify Ecology. When it is safe, the permittee must collect and analyze a sample.

The permittee must report the water quality sample results to Ecology through the WQ WebPortal. Permittees with waivers may submit results via mail to the address listed in special condition S7.A How to Submit Documents to Ecology.

³⁹ <https://apps.ecology.wa.gov/publications/SummaryPages/1503044.html>

Proposed Addition

Ecology is proposing to add this permit condition to respond to the findings in the 2021 Court of Appeals decision. Authority to include these requirements is based upon 40 CFR 122.44(i) and WAC 173-226-070.

F. Laboratory Accreditation

Ecology is not proposing changes to S5.E

All samples must be analyzed by a laboratory registered or accredited under the provisions of Accreditation of Environmental Laboratories, Chapter 173-50 WAC. Accredited laboratories in Washington State can be found through [Ecology's Lab Search Database](#)⁴⁰.

⁴⁰ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Laboratory-Accreditation>

S6 RECORD KEEPING

The reporting and recordkeeping requirements of permit condition S6 are based on federal and state laws and regulations, which allow Ecology to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges. Section 308(a)(3)(A)(v) of the Clean Water Act, 40 CFR § 122.41(j), and 40 CFR § 122.43(e) provide federal authority. RCW 90.48, WAC 173-226-090 and WAC 173-226-180 provide state authority. Keeping records and reporting provide practical measures that allow the Permittee, public, and Ecology to assess compliance with the requirements of this permit.

A. Operations and Maintenance

Ecology is not proposing changes to S6.A.

Permit condition S4.H allows a reduction in spring manure sampling after three years if certain conditions are met. Records are necessary to verify that the conditions are met. Ecology is not requiring submittal of the records supporting reduced spring manure sampling, however records of the three years of testing need to be available for inspectors to review, even if it requires retention of those records beyond the five year minimum period. Like all permits Ecology issues, records must be available from the Permittee upon request from Ecology.

Permit conditions S5.B and C specify the analysis methods that Permittees are required to have used to analyze soil and manure, litter, and process wastewater samples. This satisfies the record keeping requirements of 40 CFR § 122.42(e)(1)(ix) for 40 CFR § 122.42(e)(1)(vii). Results of analysis are submitted as part of annual reports and field nutrient budgets.

Permit condition S4.J specifies that the Permittee must follow the field nutrient budgets submitted to Ecology as required by permit condition S7.C. The permit specified that the Permittee must use the nutrient budget worksheet provided by Ecology. This determines how the Permittee calculates its nutrient budget. This satisfies the record keeping requirement of 40 CFR § 122.36. The annual report also includes reporting of the total amounts of nitrogen and phosphorus applied to land application fields from all sources, so additional record keeping is not necessary.

40 CFR § 412.37(b) further requires record keeping for:

1. Weekly inspection of all manure and contaminated water handling devices.
2. Weekly inspection of all clean water diversion devices.
3. Daily inspection of clean water (e.g. drinking, cooling) lines.
4. Weekly inspections of manure storage, noting the depth of manure in liquid manure storage.
5. Date, time, location, estimated volume of any overflow (waste storage pond).
6. Documenting actions correcting deficiencies.

These record keeping requirements are included in a monthly record keeping template that Ecology developed for Permittee use. Permittees are not required to use the template, however if a Permittee chooses not to use the template, the same information must be recorded, retained and provided to Ecology on request.

Records documenting current manure storage structures including volume, volume for solids build up (in liquid storage), design treatment volume, total volume, number of days of storage capacity are captured as part of the MPPP in permit condition S4.R so no further record keeping is necessary.

40 CFR § 412.37 requires record keeping of mortality management including how many mortalities and how they were handled. Ecology does not intend to require the Permittee to record this information so long as the livestock mortalities are handled in accordance with permit condition S4.G.

B. Land Application

Records of land application must be kept so that the Permittee may satisfy the annual reporting requirements in permit condition S7.C as required by 40 CFR § 122.42(e)(4).

Proposed Revisions

Ecology made several formatting changes to improve the readability of the permit condition. Ecology also clarified the requirement to maintain records of the amount of nutrients applied to land. The amount of nutrients, whether manure, litter, process wastewater, organic by-products or commercial fertilizer, can be reported in gallons, tons, cubic feet, or pounds per acre.

C. Export Records

Ecology is not proposing changes to S6.C.

Export is a way for an AFO to remove excess nutrients from its facility when the facility has more nutrients available than its cropping system can use. Ecology has purposely chosen to use the term export instead of “transfer” (as used in 40 CFR § 122.42(e)(3)) of waste from one entity to another. This is to help provide a distinction between permit requirements and the NRCS Waste Transfer practice (Practice 634) and to note that properly exported nutrients are no longer the responsibility of the Permittee. For an indepth discussion of manure exports under this permit, refer to special condition S4.N in this Fact Sheet.

These requirements are based upon 40 CFR § 122.42(e)(3)). However, because export is used on all types of CAFO facilities, these requirements are included in both the state and combined permits.

D. Monitoring Records

The draft permit proposes to relocate the requirement for recording monitoring samples from Special Condition S5.F Laboratory Accreditation (previously S5.E Accrediation) to the Records section of the permit. Ecology based Special Condition S6.D on its authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-216-110).

E. Providing Permit Records

Ecology is not proposing changes to S6.D.

This condition specifies how the Permittee's MPPP should be made available to Ecology and WSDA. Periodically, Ecology may have need to review the MPPP or other documents required by this permit and will submit a written request to the Permittee to submit the documents. The Permittee has 14 days to provide a copy. Additionally, reports and records required by the permit must be maintained on site and provided to Ecology or WSDA during inspections.

Reports and records that are submitted to Ecology are available from Ecology either through the public facing [permit database \(PARIS\)](https://apps.ecology.wa.gov/PARIS)⁴¹ once uploaded, or through a [public records request](https://ecology.wa.gov/Footer/Public-records-requests)⁴².

The requirements in this condition are derived from 40 CFR 122.41(h) and WAC 173-226-090(3)(a).

F. Records Retention

Ecology is not proposing changes to S6.E.

Permittees must keep all records and documents required by this permit for five years. Ecology based this permit condition on its authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-226-090). If there is any unresolved litigation regarding the discharge of pollutants by the Permittee, they must extend the period of record retention through the course of the litigation (WAC 173-226-190).

⁴¹ <https://apps.ecology.wa.gov/PARIS>

⁴² <https://ecology.wa.gov/Footer/Public-records-requests>

S7 REPORTS

The reporting and recordkeeping requirements of permit condition S7 are based on the federal and state authorities, which allow Ecology to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges. Section 308(a)(3)(A)(v) of the Clean Water Act and 40 CFR § 122.41(l) provide federal authority. RCW 90.48, WAC 173-226-090 and WAC 173-226-180 provide state authority. Keeping records and reporting provide practical measures that allow the Permittee and Ecology to assess compliance with the requirements of this permit.

A. Electronic Reporting Requirements

Proposed Addition

Ecology proposes to require electronic reporting unless a Permittee obtains a waiver. This proposed electronic reporting requirement is expected to save time and resources for permittees and Ecology (e.g., eliminating paperwork, data entry workload, database errors) while improving compliance and protection of water quality. It will also enhance transparency and public accountability.

The electronic reporting waiver provisions are intended to allow a paper option for small business that may not have the ability to use the Water Quality Web Portal system (e.g. they do not have broadband internet or a business computer). The permit contains mailing instructions for permittees who receive a waiver. Permittees are responsible for ensuring that their reports are received on time.

Electronic submittals are through [Ecology's Water Quality Permitting Portal](#)⁴³. Ecology maintains guidance and provides technical assistance to Permittees at [Ecology's WQWeb Portal](#)⁴⁴.

The requirement for electronic submittal makes progress with Ecology's obligation to comply with EPA's NPDES Electronic Reporting Rule (40 CFR Parts 122, 123, 127, 403, 501 and 503). RCW 43.17.095 also requires Ecology to offer electronic reporting options.

B. Submittal of MPPP

The proposed permit requires CAFOs applying for permit coverage submit their initial MPPP to Ecology for review. Applicants must refer to special condition S2.A How to Apply for Permit Coverage for application instructions. The requirements for the MPPP are specified in special condition S4.A. Pollution Prevention Plan.

⁴³ <https://secureaccess.wa.gov/ecy/wqwebportal>

⁴⁴ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance>

CAFO permittees who make changes to their MPPP must submit them to Ecology for review according to special condition S4.A.4. See the discussion in this fact sheet at special condition S4.A Pollution Prevention Plan for permit modification procedures.

Proposed Revisions

Ecology made revisions to this condition to address procedures for Nutrient Management Plans. See [Wash. State Dairy Fed'n v. Dep't of Ecology](#) (2021).

C. Waste Storage Structure Assessment

As discussed in earlier in the [section on special condition S1.A](#), waste storage facility construction varies across CAFOs in Washington. The current industry standard for agricultural waste storage facility construction is NRCS Conservation Practice Standard 313. Agricultural engineers use NRCS' Agricultural Waste Management Field Handbook to design new and refurbish waste storage facilities to the Practice Standard.

Ecology based special condition S7.C on its authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-226-090). Because Permittees under the state permit and combined permit are likely to have liquid and solid waste storage facilities the requirements for the waste storage structure assessment are the same in both permits.

Liquid Waste Storage Structures

In response to comments on the draft version of the previous permit, Ecology required the use of NRCS Engineering Technical Note 23 – Assessment Procedure for Existing Waste Storage Ponds to assess existing waste storage ponds. NRCS Engineering Technical Note 23 is the current industry standard for scoring the structural and site risk of existing waste storage ponds. The benefit of using this assessment in the CAFO general permits is that the assessment may be a prerequisite for [financial assistance through NRCS conservation programs](#)⁴⁵.

This assessment involves (1) documenting the current waste storage pond site and structure conditions and (2) comparing it to NRCS criteria in place at the time of construction. The results of the assessment are summarized into four categories with two to three subcategories. In the assessment, NRCS provides recommendations for whether the pond should continue to be used or would benefit from repairs, improvements or replacement. NRCS recommends continued use of waste storage ponds in assessment categories 1A, 1B, and 2A. All other assessment categories, NRCS recommends the CAFO operator discontinue use of the pond until minor or major repairs are completed or the pond is completely replaced.

Special condition S7.C.2 in the draft permits requires Permittees with waste storage ponds that do not have leak detection systems to employ a **qualified expert** to assess the condition of the

⁴⁵ <https://www.nrcs.usda.gov/wps/portal/nrcs/main/wa/programs/farbill/>

ponds using NRCS Engineering Technical Note 23 – Assessment Procedure for Existing Waste Storage Ponds. If the results of the assessment recommend repairs or replacement, the Permittee must discontinue use of the waste storage pond and submit a plan to fix deficiencies. If the assessment identifies there is less than two feet of vertical space between the pond liner and the seasonal high water table, the Permittee is required to address the noncompliance with S4.C. This is to ensure identified problems are addressed to prevent water quality impacts.

Permittees are required to develop a plan to fix major deficiencies in the waste storage within 6 months and complete the work within 18 months of completing the waste storage pond assessment. Ecology used the Memorandum of Understanding between Ecology and the Conservation Districts to set the timeline for developing a plan to address high risk storage ponds. Ecology expects that in most cases, the Conservation Districts and NRCS will be involved in making improvements to existing waste storage ponds.

Ecology recognizes that in some circumstances major repairs or refurbishments of the waste storage ponds may take longer than 18 months, so an extension of time may be requested and approved through a modification of permit. Modification of permit coverage requires publically noticing the change request and it's technical basis.

Solid Waste Storage Structures

The draft permit conditions in S7.C.3 and 4 include assessment procedures for solids storage and composting areas where solid manure, bedding, and other organic by-products are dried, stacked, and sometimes composted for further use. It does not address disposal or composting of animal mortalities. Refer to special condition S4.G Livestock Mortality Management.

The draft permits require an assessment of the condition of the surface on which the solid material is stored or composted. Ecology approached the solid storage area assessment in a way similar to the liquid storage facilities. Structures that can be visually monitored for compliance with the requirements in S4.C. (impervious surfaces) have a different procedure than structures on soil pads. Ecology is requiring Permittees demonstrate adequate compaction in special condition S7.C.4. The assessment requires an evaluation by a qualified expert to confirm compliance with S4.C. Alternatively, a Permittee may submit results from a double-ring infiltrometer test. If the assessment identifies deficiencies in the structure, Permittees must collect and analyze soil samples from beneath the soil pad in addition to making repairs to the soil pad. If the results from the assessment and soil sampling indicate a reasonable potential to impact groundwater, Ecology will require a groundwater monitoring evaluation that follows procedures in S5.D.

Proposed Revisions

Ecology is proposing to require that all deficiencies identified in the assessment(s) be addressed within 18 months of the assessment. Previously, the permit condition required the repairs or replacement of waste storage ponds to reach Category 1. This was infeasible for some ponds

assessed as categories 3C or 4 due to site conditions. For example a pond built in an area of medium to high aquifer susceptibility with well-draining soils, will only ever reach Category 2A, regardless of modifications that reduce risk to water quality. In situations where the site risk is medium or high, the NRCS Agricultural Waste Management Field Handbook recommends considering other means of protecting the groundwater from discharges, such as a synthetic liner with a leak detection system. Ecology proposes to replace the requirement in the previous permit with NRCS' recommendation in Technical Note 23 to discontinue use until structural repairs are completed and additional practices to reduce discharge potential in the event of a structural failure are considered.

Ecology is clarifying that when deficiencies are identified in the assessment (i.e. medium or high structure risk), the permittee must discontinue using the waste storage pond until repairs are complete. This applies to all risk categories, including 2A and 2B. Previously, special condition S7.C did not specify the need for repairs to waste storage ponds in risk categories 2A and 2B, however S4.B required liquid storage structures to be repaired as necessary. The requirement introduced in S7.C is based on the recommended actions in Technical Note 23 and references the requirement in S4.B. This clarification was made to ensure that potential discharges are not made worse by continued use. These changes are made in response to [Wash. State Dairy Fed'n v. Dep't of Ecology](#) (2021).

Ecology is also proposing to address the need to define who is qualified to assess the condition of waste storage facilities and the risk to water quality. By specifying that only a "qualified expert" can conduct the waste storage assessment, Ecology is ensuring the results of the risk assessment are reliable and protective. Qualified expert is defined in Appendix A of the permit as "Individuals who: (1) Have received professional training in the aspects of waste storage facility design and construction; and (2) Are capable of evaluating the conditions of the facility that could impact water quality at the site as required by this permit." In the case of the waste storage ponds, if NRCS staff does not conduct assessment, then a qualified expert such as a professional engineer must conduct the assessment.

Ecology included requirements for evaluating the condition of solid storage structures. When manure, litter, and other solid organic-by products are stored in piles, their decomposition may produce leachate or contaminated runoff. The proposed assessment confirms compliance with S4.C and includes procedure when deficiencies are identified. These changes are made in response to [Wash. State Dairy Fed'n v. Dep't of Ecology](#) (2021).

D. Annual Report

WAC 173-226-090(3) requires that Permittees periodically report to Ecology. 40 CFR § 122.42(4)(i)–(viii) describes the federal annual reporting requirements for permitted CAFOs. All nine requirements were included in this form. In order to align the annual reporting requirements between Federal and State regulations, Ecology is requiring reporting on an annual basis in both permits.

The annual reporting form developed by Ecology as part of the draft permit contain the required reporting elements. The form is included in Appendix A of the permit and is accessible from [Ecology's CAFO Permit webpage](#)⁴⁶.

Field Nutrient Budgets

Ecology is prescriptive with minimum technical and operating standards in order to shift the permit paradigm away from the review and approval process set in Federal CAFO rules. The yearly field nutrient budget submittal is one of the pieces necessary to make this process work.

Each year, along with the annual report, the Permittee must submit a field nutrient budget for each field that they own, operate, lease, or otherwise control for land application. This does two things for the Permittee. First, it allows the Permittee to easily change fields in response to changing leases or other agreements. Fields that the Permittee owns, operates, leases, or otherwise controls can change on a yearly basis, which under the Federal CAFO rule requires a revision of the NMP, approval by Ecology, public notice, and a public comment period. Second, this allows the Permittee to change the crops they choose to grow on a yearly basis (which may otherwise require the review process). Based on the Federal CAFO rule, a NMP would need to include the crops that a Permittee is planning to grow for the next 5 years. In this scenario, any changes to require an update of the NMP, and approval by Ecology. Ecology posts these field nutrient budgets, along with the annual report, every year through our [permitting database PARIS](#)⁴⁷.

Field nutrient budgets are required to be submitted along with the annual report each year for each field that the Permittee controls. The nutrient budget is the expression of permit limits for land application of manure, litter, and process wastewater in terms of how much will actually be applied to each field over a season.

Proposed Revisions

Ecology is proposing formatting changes to this permit condition after multiple permittees failed to submit all of the required pieces in the annual report—the completed form, yearly nutrient budgets, and the certification statement. We expect this change will make the requirement clearer.

⁴⁶ <https://ecology.wa.gov/cafo>

⁴⁷ <https://apps.ecology.wa.gov/PARIS>

Ecology is proposing to require permittees to report the date samples were collected for the post-harvest soil tests. This will help Ecology better interpret results and determine compliance with S4.I. This change is reflected in annual report form appended to the permit. WAC 173-226-180 authorizes Ecology to establish permit conditions as necessary to achieve compliance with effluent standards, water quality standard, discharge limits, and other applicable requirements.

E. Reporting Permit Violations

These conditions require that the Permittee report instances of noncompliance to Ecology within 24-hours of becoming aware of an instance of noncompliance (e.g. unauthorized discharge) and follow up with a written report within five days. This type of reporting provides practical measures that allow the Permittee, public, and Ecology to assess noncompliance with the requirements of this permit and potential impacts to waters of the state.

The timing of noncompliance reporting and reports that must be submitted are the same as those in the combined permit based on 40 CFR § 122.41(l)(6) in order to maintain consistency across the two permits which cover the same type of activities.

Failure to report noncompliance is a violation of the permit and may constitute grounds for enforcement actions or termination of the permit coverage.

Permittees are required to report noncompliance to Ecology within 24-hours of the Permittee becoming aware of the instance of noncompliance. This must be followed up within five days with a written report detailing the noncompliance unless Ecology agrees to waive the written report.

CAFOs operate continuously in order to ensure that animals are cared for appropriately. It is likely that instances of noncompliance that occur outside of the 8am-5pm business hours. In the instances of noncompliance outside of standard business hours Permittees could leave a voice message instead of waiting until business hours the next day to report the noncompliance. A phone message in this case is like an email in that the receiver is not present for the message, but receives it at later date. For these reasons Ecology is providing the option for the Permittee to submit 24-hour noncompliance notification to Ecology via email. The option to report the noncompliance via phone call or voice message are still available.

Both the 24-hour report and the five day written report must both contain the information specified in 40 CFR § 122.41(l)(6). The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

WAC 173-226-180 authorizes Ecology to establish permit conditions as necessary to achieve compliance with effluent standards, water quality standard, discharge limits, and other applicable requirements. In addition to state requirements Federal regulations at 40 CFR §

122.41(l)(6) specifies when and how a Permittee must report noncompliance with their permit that may endanger human health or the environment. Ecology requires that if a Permittee violates permit conditions, it must take steps to stop the activity, minimize any violations, and report those violations to Ecology.

Proposed Revisions

Ecology is proposing to add the requirement to collect and analyze samples when discharges occurs. These changes are made in response to [Wash. State Dairy Fed'n v. Dep't of Ecology](#) (2021). Authority to include these requirements is based upon 40 CFR 122.44(i) and WAC 173-226-070.

Additionally, Ecology added the requirement that permittees contact regional phone numbers that accept reports 24 hours a day. This is to ensure that inspection staff at Ecology and WSDA receive timely notice.

F. Spills Reporting

Ecology is not proposing changes to the requirement in S7.F, but did change the title from S7.E to S7.F.

The Permittee must be prepared to mitigate for any potential hazardous spills and, in the event of a spill, perform the necessary cleanup, and notify the appropriate Ecology regional office (see RCW 90.48.080, and WAC 173-226-070).

RCW 90.56.280 and chapter 173-303-145 WAC require Permittees to report spills of oil or hazardous materials. The phone numbers for the Washington Emergency Management Division and National Response Center are provided in the permit.

S8 APPENDICES

Appendix A: Definitions and Appendix B: Annual Report are incorporated by reference into this permit.

Proposed Revisions

Ecology added three definitions to the permits. A definition of qualified expert was needed to clarify requirements for conducting assessments of waste storage facilities. The two climate types used in the permit were defined to improve readability in sections that referenced annual average precipitation amounts. Ecology also revised the term for lagoons to waste storage ponds to better align with NRCS' terminology.

Minor changes were made to the Annual Report in Appendix B. Ecology made several formatting changes to improve document accessibility for blind and low vision web users. Ecology updated the animal types listed to match those in the Permit Fee Rules (WAC 173-224).

Ecology is also proposing to require permittees to report the date samples were collected for the post-harvest soil tests.

GENERAL CONDITIONS

Ecology is not proposing changes to the General Conditions.

General Conditions are based on state and federal law and regulations and have been standardized for all NPDES and State Waste Discharge permits issued by the Ecology. Some of these conditions were developed for different types of discharges. Although Ecology is required by federal regulation to include them in the permit, they may not be strictly applicable.

General Conditions are the same in both CAFO permits.

G1 DISCHARGE VIOLATIONS

This condition requires discharges and activities authorized by the draft permit to be consistent with the terms and conditions of the permit in accordance with 40 CFR §122.41.

G2 PROPER OPERATION AND MAINTENANCE

This condition requires the Permittee to properly operate and maintain the facility systems that are intended to achieve compliance with the permit in accordance with 40 CFR 122.41(e) and WAC 173-226-080(1)(h).

G3 RIGHT OF ENTRY

This condition requires the Permittee to allow Ecology to access the facility and conduct inspections of the facility and records related to the permit in accordance with 40 CFR §122.41(i), RCW 90.48.090, and WAC 173-220-150(1)(e).

G4 PERMIT COVERAGE REVOKED

This condition identifies conditions for revoking coverage under the general permit in accordance with 40 CFR §122.62, 40 CFR §124.5, WAC 173-226-240, WAC 173-220-150(1)(d), and WAC 173-220-190.

G5 GENERAL PERMIT MODIFICATION AND REVOCATION

This condition identifies conditions that may result in modifying or revoking the general permit in accordance with 40 CFR §122.62, 40 CFR §124.5, and WAC 173-226-230.

G6 REPORTING A CAUSE FOR MODIFICATION

This condition requires the Permittee to notify Ecology when facility changes may require modification or revocation of permit coverage in accordance with 40 CFR §122.62(a), 40 CFR §122.41(l), WAC 173-220-150(1)(b), and WAC 173-201A-510(1).

G7 TOXIC POLLUTANTS

This condition requires the Permittee to comply with more stringent toxic effluent standards or prohibitions established under Section 307(a) of the Clean Water Act in accordance with 40 CFR §122.41(a)(1), WAC 173-220-120(5), and WAC 173-201A-240. It is included only in the Combined permit.

G8 OTHER REQUIREMENTS OF 40 CFR

This condition incorporates all other requirements of 40 CFR §122.41 and 122.42 by reference. It is included only in the Combined permit.

G9 COMPLIANCE WITH OTHER LAWS AND STATUES

This condition prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations in accordance with 40 CFR §122.5(c).

G10 ADDITIONAL MONITORING

This condition notifies the Permittee that additional monitoring requirements may be established by Ecology in accordance with 40 CFR §122.41(h). Ecology plans to develop procedures for additional monitoring requirements for CAFOs that have unauthorized discharges under the permit. These additional monitoring requirements would be site-specific and issued through an Administrative Order or a Compliance Schedule.

G11 PAYMENT OF FEES

RCW 90.48.465 requires Ecology to recover the cost of the water quality permit program. CAFO and dairy fees are established through a rule development process. Any new fee proposal will provide public comment opportunity in amending the existing fee regulation (Chapter 173-224 WAC).

Some facilities may qualify for and receive an extreme hardship fee reduction under the Wastewater Discharge Permit Fee Rule (Chapter 173-224 WAC). Extreme hardship applies only if the annual sales of goods or services produced using the processes regulated under the permit is \$100,000 or less and the fee poses an extreme hardship to the business.

G12 REQUESTS TO BE EXCLUDED FROM COVERAGE UNDER A GENERAL PERMIT

This general condition specifies that Permittees may request their general permit coverage be replaced by an individual permit in accordance with 40 CFR 122.62, 40 CFR 124.5, and WAC 173-220-040.

G13 PENALTIES FOR VIOLATING PERMIT CONDITIONS

This condition describes the penalties for violating permit conditions in accordance with 40 CFR §122.41(a)(2) and

G14 SIGNATORY REQUIREMENTS

This condition requires responsible officials or their designated representatives to sign submittals to Ecology in accordance with 40 CFR §122.22, 40 CFR §122.22(d), WAC 173-220-210(3)(b), and WAC 173-220-040(5).

G15 APPEALS

This condition defines appeal options for the terms and conditions of the general permit and of coverage under the permit by an individual discharger in accordance with RCW 43.21B and WAC 173-226-190.

G16 SEVERABILITY

This condition invokes severability of permit provisions in accordance with RCW 90.48.904.

G17 DUTY TO REAPPLY

This condition requires the Permittee to reapply for coverage 180 days prior to the expiration date of this general permit in accordance with 40 CFR §122.21(d), 40 CFR §122.41(b), and WAC 183-220-180(2).

G18 MONITORING BEYOND PERMIT REQUIREMENTS

If the permittee conducts additional monitoring to document compliance, with this permit, the sampling and analysis must be an EPA-approved method. In certain circumstances where an EPA-approved test method is not available, Ecology may specify alternatives. This condition is in accordance with 40 CFR §122.41(l)(4)(iii). It is included only in the Combined permit.

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1. Peer review is overseen by an independent third party.
2. Review is by staff internal to Department of Ecology.
3. Review is by persons that are external to and selected by the Department of Ecology.
4. Documented open public review process that is not limited to invited organizations or individuals.
5. Federal and state statutes.
6. Court and hearings board decisions.
7. Federal and state administrative rules and regulations
8. Policy and regulatory documents adopted by local governments.
9. Data from primary research, monitoring activities, or other sources, but that has not been incorporated as part of documents reviewed under other processes.
10. Records of best professional judgment of Department of Ecology employees or other individuals.
11. Sources of information that do not fit into one of the other categories listed.

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APPENDICES

APPENDIX A: GLOSSARY OF TERMS

All definitions listed below are for use in the context of this permit only.

25-year, 24-hour Storm Event: Means the amount of precipitation from a 24-hour storm event that has the likelihood of occurring once in a 25-year period. The amount of precipitation from a storm event of this type varies by location.

Agricultural Stormwater: Discharges to surface water from land application fields generated only by precipitation provided that the following are true:

1. The discharge was not from the **production area**,
2. The discharge was not caused by human activities even if the activity took place during precipitation, and
3. Permittee is in compliance with their CAFO permit.

All known, available, and reasonable methods of prevention, control, and treatment (AKART):

A technology-based approach of engineering and economic decision-making for limiting pollutants from discharges. AKART represents the most current methodology for preventing, controlling, and abating pollution that can be reasonably installed or used at a reasonable cost. Described in chapters 90.48 and 90.54 RCW and chapters 173-201A, 173-204, 173-216 and 173-220 WAC.

Applicant: The person or entity applying for permit coverage.

Application for Coverage: Means the form developed by Ecology used by a discharger to apply for coverage under a **general permit**. It is specific to each general permit. Also referred to as a **Notice of Intent** or **NOI**.

Application Rate: Means the rate in quantity per acre (e.g. gallons/acre, tons/acre) that manure, litter, process waste, process wastewater, or other nutrients from all sources are applied to a land application field.

Beneficial Use: Means all existing and future uses of waters of the state as defined in WAC's 173-200-020(4), 173-201A-020, and 173-216-030(1). All uses have the same priority.

Best Management Practices (BMPs): Mean schedules of activities, prohibitions on practices, maintenance procedures, and other management techniques or strategies to prevent or reduce the discharge to **waters of the state**. BMPs also include treatment requirements, operating procedures, and physical interventions and barriers to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Control: Performing, directing, managing, overseeing, supervising, or giving instruction about, any action or decision.

Composite Sample: A series of grab samples collected over several locations within a field or *management unit* and combined together.

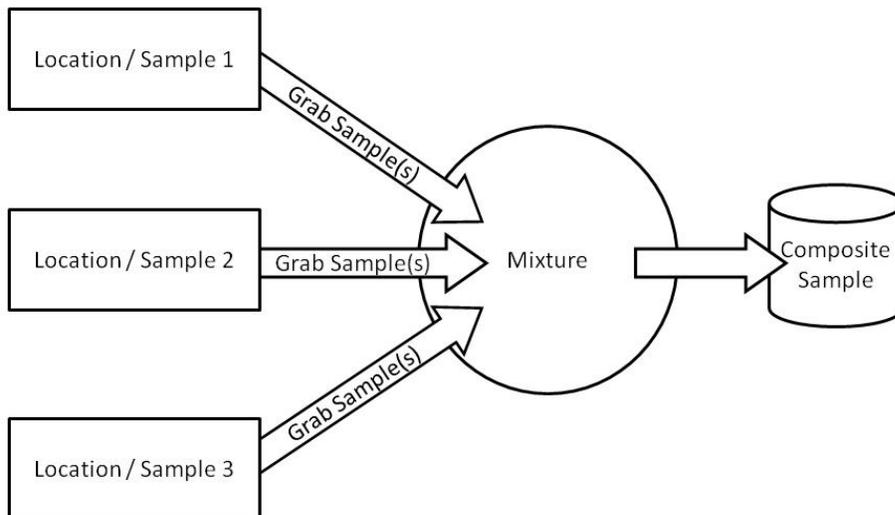


Figure 1 Composite Sample

Crest: Means the highest point of the structural (e.g. embankment) wall of a *waste storage pond* or other liquid storage structure.

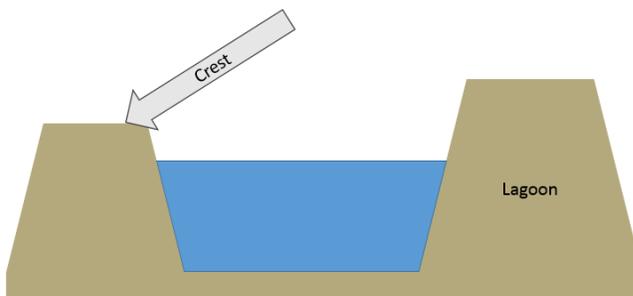


Figure 2 Crest of a waste storage structure

Discharge: Means the addition of any *pollutant* or combination of pollutants to *waters of the state*.

Discharger: Means the owner or operator of any commercial or industrial operation subject to regulation under chapter 90.48 RCW or the federal Clean Water Act due to a *discharge*.

Effluent Limitation: Means any restriction on timing, quantities, rates, and concentrations of *pollutants* discharged from point sources into waters of the state. Includes *best management practices*.

Existing Operation: An operation that began operating prior to the issuance date of this permit.

Export: Means the removal of manure, litter, and process wastewater, or other sources of nutrients from the CAFO's production system to another party that is not under the **control** of the Permittee.

Feed: Materials used for animal nutrition or that will be processed and used for animal nutrition that are stored by the CAFO such as silage, grain, vegetable leavings, or other materials used for animal nutrition.

Freeboard: Means the vertical distance from the maximum storage level (including normal storage plus storage volume for a 25-year, 24-hour storm event) of a waste storage pond to the lowest point on the pond **crest**.

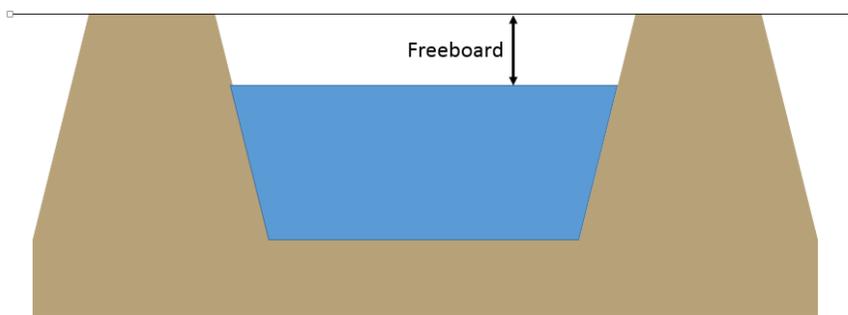


Figure 3 Freeboard

General Permit: Means a permit that covers multiple dischargers of a point source category within a designated geographical area in lieu of issuing individual site-specific permits to each discharger.

Geomembrane Liner: Means a type of waste storage pond liner material that is a synthetic polymer such as reinforced polypropylene, high density polyethylene (HDPE), or polyvinyl chloride (PVC) and that is usually between 35 and 60 mil thick.

Groundwater: Water located below the surface of the ground that is a **water of the state**. Surficially perched water is groundwater (Douma v. Ecology PCHB 00-019).

Indian Country: Means as defined in 18 USC 1151: "Except as otherwise provided in sections 1154 and 1156 of this title, the term "Indian country", as used in this chapter, means (a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same."

Land Apply/Application: Means the process of putting manure, litter, process waste, process wastewater, or other sources of nutrients on to a field to provide nutrients for crop growth.

Land Application Field: Means a single contiguous land unit under the control of the CAFO (excluding the production area) to which manure, litter, process wastewater, or other sources of crop nutrients are applied as a fertilizer or soil amendment.

Litter: Animal bedding, materials used in animal housing such as straw, sand, or shavings on the floor, or spilled **feed** that has come into contact with manure or other contaminants.

Management Unit: Means portions of a field or portions of multiple closely located fields which have the same or very similar soil and crop growth characteristics which allow them to be managed as a single **land application field**.

Manure: Liquid and solid livestock excrement.

New Operation: An operation that began operation after the issuance date of this permit.

Notice of Intent (NOI): A formal application or request for coverage under a **general permit** pursuant to WAC 173-226-200. See also **Application for Coverage**.

Notice of Termination (NOT): A request by the **Permittee** to Ecology to end the Permittee's permit coverage because the facility no longer requires a permit.

Over-Top: The addition of manure, litter, process waste, process wastewater, liquid, or other material including precipitation, to a waste storage pond until the level of the liquid in the pond rises over the pond **crest**.

Permit: Means an authorization, license, or equivalent control document issued by Ecology to implement chapter 90.48 RCW, the federal Clean Water Act, and associated statutes by allowing discharges of pollutants to **waters of the state** within constraints.

Permittee: Means the person or entity that holds a permit coverage allowing specific discharge(s) to waters of the state (surface or ground).

Point Source: Means any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.

Pollutant/Pollution: Means such contamination, or other alteration of the physical, chemical or biological properties, of any waters of the state, including change in temperature, taste, color, turbidity, or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare, or to

domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.

It also means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water.

Process Wastewater: Any water that is used as part of the operation of a CAFO that has come into contact with **manure, litter, feed**, or digestate from anaerobic digesters, is used in the processing of products (e.g. egg washing) by the CAFO, or otherwise comes into contact with contaminants on the CAFO.

Production Area: Means the locations making up a CAFO facility that are used for animal confinement, **manure, litter, feed**, and **process wastewater** storage, product processing facilities (e.g. milking parlor, egg washing, feed mixing), and other areas used for the storage, handling, treatment, processing, or movement of raw materials, products, or wastes. This includes manure stockpiled on fields.

Sanitary Control Area: Means **groundwater** source protection areas as defined in WAC 246-290-135.

Saturated Soil: Means soil that no longer has the capacity to retain additional water within its pore structure.

Silage Leachate: Seepage from silage piles in bags, bunkers, silos, or other silage storage areas.

Synthetic Liner: Synonymous with **Geomembrane Liner**.

Top of the Bank: Means the point on the edge of a field past which the land drops quickly down into a drainage ditch, surface water, or depression in the land.

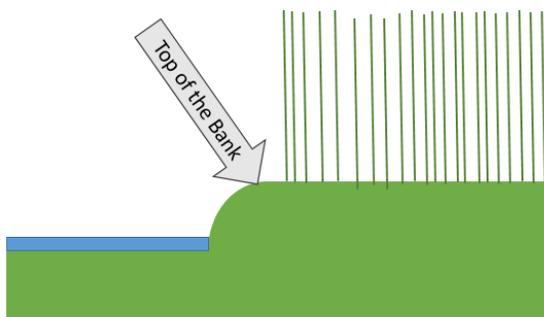


Figure 4 Top of the bank

Total Maximum Daily Load (TMDL): A calculation of the maximum amount of a pollutant that a water body can receive and still meet state water quality standards. Percentages of the total

maximum daily load are allocated to the various pollutant sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The TMDL calculations include a "margin of safety" to ensure that the water body can be protected in case there are unforeseen events or unknown sources of the pollutant. The calculation also accounts for reasonable variation in water quality.

Trust or Restricted Lands: Means as defined in 25 USC § 2201(4): “(i) ‘trust or restricted lands’ means lands, title to which is held by the United States in trust for an Indian tribe or individual, or which is held by an Indian tribe or individual subject to a restriction by the United States against alienation; and (ii) ‘trust or restricted interest in land’ or ‘trust or restricted interest in a parcel of land’ means an interest in land, the title to which interest is held in trust by the United States for an Indian tribe or individual, or which is held by an Indian tribe or individual subject to a restriction by the United States against alienation.”

Upset: Means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. See 40 CFR § 122.41.

Waste: Means discarded materials.

Waste Storage Pond: Means a structure designed for storage of liquid manure, process wastewater, digestate, or other liquids or slurries. May also be referred to as a temporary storage pond or lagoon.

Water Table: Means the level at, and below, which the ground is completely saturated with water.

Waters of the State: Includes lakes, rivers, ponds, streams, inland waters, underground waters (*groundwater*), salt waters and all other surface waters and watercourses within the jurisdiction of the state of Washington (RCW 90.48.020).

- **Water Quality Standards:** Means the current state and federal standards for water quality including, but not limited to: Surface Waters of the State of Washington (chapter 173-201A WAC).
- Ground Water Quality Standards (chapter 173-200 WAC).
- Sediment Management Standards (chapter 173-204 WAC).
- Human health based criteria in the National Toxics Rule (40 CFR § 131.36).

APPENDIX B: ACRONYMS AND UNITS OF MEASURE

AFO: Animal Feeding Operation

AKART: All known, available, and reasonable methods of pollution control, prevention, and treatment

BAT: Best Available Technology Economically Achievable

BCT: Best Conventional Pollutant Control Technology

BPJ: Best Professional Judgment

BPT: Best Practicable Control Technology Currently Available

BOD: Biological Oxygen Demand

CAFO: Concentrated/Confined Animal Feeding Operation

CFR: Code of Federal Regulations

COD: Chemical Oxygen Demand

CWA: Federal Clean Water Act

DNMA: Dairy Nutrient Management Act, chapter 90.64 RCW

EPA: United States Environmental Protection Agency

FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act

FWPCA: Federal Water Pollution Control Act, synonym for CWA

MOA: Memorandum of Agreement

MPPP: Manure Pollution Prevention Plan

NMP: Nutrient Management Plan

NOI: Notice of Intent (also referred to as the Application for Coverage)

NOT: Notice of Termination

NPDES: National Pollutant Discharge Elimination System

NRCS: Natural Resource Conservation Service

NSPS: New Source Performance Standards

PCHB: Pollution Control Hearings Board

RCW: Revised Code of Washington

SEPA: State Environmental Policy Act, RCW 43.21C, WAC 197-11

TMDL: Total Maximum Daily Load

TSP: Technical Service Provider

WAC: Washington Administrative Code

WSDA: Washington State Department of Agriculture

USC: United State Code

USDA: United States Department of Agriculture

APPENDIX C: RESPONSE TO COMMENTS

Ecology will append responses to comments after the public comment periods has concluded.