

RESPONSE TO COMMENTS

FOR THE

CONCENTRATED ANIMAL FEEDING OPERATION
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
AND
STATE WASTE DISCHARGE GENERAL PERMIT

AND

CONCENTRATED ANIMAL FEEDING OPERATION
STATE WASTE DISCHARGE GENERAL PERMIT

APPENDIX C OF THE FACT SHEET

January 18, 2017

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This Response to Comments addresses comments on both the Concentrated Animal Feeding Operation (CAFO) National Pollutant Discharge Elimination System and State Waste Discharge General (Combined) Permit and the CAFO State Waste Discharge General (State Only) Permit.

Where Ecology has made the same change to both permits, Ecology's response applies to both.

Where Ecology has made a different change to both permits due to differences in authorities under which the permits are issued, the changes will be called out under "**Combined**" and "**State Only**" headings.

Brief Summary of General Outreach by Ecology:

- **2014:** Began outreach with industry, environmental groups, tribes, and state and local governments with meetings and listening sessions.
- **April 2015:** Held general public "listening" sessions in Bellingham and Zillah.
- **August 2015:** Shared "draft of a draft" permit with the public.
- **October 2015:** Posted public comments on "draft of a draft" permit.
- **November 2015:** Briefed Legislators at Assembly Days.
- **January/February 2016:** Held separate meetings with producers and environmental activists to discuss "the science" and other issues related to CAFO's.
- **June 2016:** Released for public review and comment two virtually identical CAFO permits – one issued under state authorities only (state-only) and a second permit issued under both federal and state authorities (combined).
- **July 2016:** Held public hearings on the draft combined and state only permits.
- **August 15/30, 2016** – Public comment period originally scheduled to end on August 15th was extended to August 30th.
- Received approximately 4,600 comments.

After receiving, reviewing, and responding to public comments about the draft permits we proposed in June 2016, we are issuing the final, updated combined and state only CAFO Permits.

COMMENTS ON THE SPECIAL CONDITIONS OF THE DRAFT CAFO PERMITS

S1. PERMIT COVERAGE

Commenters:

<ul style="list-style-type: none"> • Dennis Nicholson • Environmental Engineering Associates • Jim Dyjak • John Miller • Joy Gilfilen 	<ul style="list-style-type: none"> • King County Department of Natural Resources and Parks • Kip Dunlap • Monica Persson • N3 Consulting • Natural Resource Conservation Service 	<ul style="list-style-type: none"> • Northwest Indian Fisheries Commission • South Yakima Conservation District • Steensma Dairy • Western Environmental Law Center
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Range of Comments:

1. CAFO is defined differently than the federal definition.
 - This permit requirement is vague, inconsistent with the requirements of other state and federal laws requiring permits or prevention of any on-going discharges.
 - The definition of CAFO used by the permit is significantly different from that in 40 CFR § 122.23, it should be the same.

Ecology Response:

The template for this table was borrowed from Oregon’s CAFO permits and combines the definitions of Animal Feeding Operation (AFO) and Concentrated Animal Feeding Operation (CAFO) into a more user friendly format which also includes other regulatory considerations for determining if a CAFO must obtain permit coverage (e.g. allowances for agricultural stormwater in the combined permit). As defined in 40 CFR § 122.23(a)(1) and (2):

(1) Animal feeding operation (“AFO”) means a lot or facility (other than an aquatic animal production facility) where the following conditions are met:

(i) Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and (ii) Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

(2) Concentrated animal feeding operation (“CAFO”) means an AFO that is defined as a Large CAFO or as a Medium CAFO by the terms of this paragraph, or that is designated as a CAFO in accordance with paragraph (c) of this section. Two or more AFOs under common ownership are considered to be a single AFO for the purposes of determining the number of animals at an operation, if they adjoin each other or if they use a common area or system for the disposal of wastes.

There are two differences. First the table includes language about when a discharge to groundwater causes a facility to be defined as a CAFO that must obtain permit coverage. This is based on RCW 90.48.160 which states (paraphrased) that a commercial or industrial operation (a CAFO being a commercial operation) which has a discharge to waters of the state (surface or groundwater) requires a permit.

The second difference is that Ecology has combined the federal large and medium CAFO size categories into a single CAFO category where the only distinction is between CAFOs and small CAFOs. The reason for this change is there is no meaningful difference between large and medium size CAFOs when determining if a CAFO must obtain a permit coverage. And there is no difference in permit requirements large and medium CAFOs must meet. Combining the large and medium categories into a single category streamlines the permit language and removes an artificial distinction.

2. The permit excludes aquatic animal production facilities from being CAFOs. Are there separate permits for these types of facilities? If so, the permit should include a reference to those other aquatic animal production facility permits.

Ecology Response:

Ecology is not including a reference to aquatic animal production facility permits. Doing so is likely to create confusion for readers of the CAFO permit and is not helpful for users following the CAFO permit.

Ecology does issue permits for upland fish hatcheries and net pens. More information may be found here:

Hatcheries: http://www.ecy.wa.gov/programs/wq/permits/fin_fish/index.html

Net pens: <http://www.ecy.wa.gov/programs/sea/aquaculture/netpen.html>

3. The permit references “sustained vegetation” over “any portion of the lot” as a factor for determining if a facility is a CAFO. Ecology should define “sustained vegetation”.

Ecology Response:

The comment references the following statement which is language pulled directly from the AFO definition in 40 CFR § 122.23(a)(1)(ii): “*Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility where the animals are confined.*” Ecology believes that the intent of the statement is clear. The statement differentiates between confinement areas where any plants that are growing are minimal and incidental (e.g. weeds along a bare-lot fence line or in cracks in concrete), and actual pastures or crop fields where animals may be grazed on the dense vegetation (e.g. grass, alfalfa) or crop stubble (e.g. corn stalks, triticale stubble, winter cover crop) present on the field.

4. Are facilities that confine animals for a maximum of 44 days during any 12 month period exempt from needing to get this permit?

Ecology Response:

Based on the definition of CAFO, such a facility would not require permit coverage. However, if the facility has a discharge and is determined to be a significant contributor of pollutants by Ecology, it could be required to obtain a CAFO permit.

5. Ecology should provide a reference to animal weights so that determinations of CAFO size based on animal numbers and weight are consistent. Referencing Table 2, CAFOs of “Other Animal Types”.

Ecology Response:

Ecology does not require the use of animal units in the CAFO permits and relies on animal numbers instead as is done in the federal CAFO rules. Animal units are currently only used for determining permit fees (WAC 173-224-040) because previous Ecology permits and EPA rules used animal units.

Ecology is not aware of a resource which would list all potential animal types and their animal unit conversion. WAC 173-224-030 provides a definition of animals per animal units based for most common animal types. One-thousand (1,000) pounds live weight per animal unit is used as the conversion from animal numbers to animal units for other animal types. For other animal types, Ecology will likely need to rely on the producers' knowledge of average animal weights in order to make an equivalency determination. NRCS provides a conversion for a few more animal types (e.g. bison, deer, and elk) in Chapter 6 of National Range and Pasture Handbook:

http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1043065.pdf

6. The permit should clarify when multiple separate CAFO facilities are considered a single facility for the purposes of permit coverage.

Ecology Response:

Ecology agrees and has added this following statement modified from 40 CFR § 122.23(a)(2) to the language of Special Condition S1: *“Two or more CAFOs under common ownership are considered to be a single CAFO for the purposes of permitting if they adjoin each other or if they use a common area or system for handling manure, litter, and process wastewater.”*

7. The permit does not specify a minimum number of animals below which a facility will not be considered a CAFO. This means that hobby farms (generally meaning land owners who have a small number of animals, e.g. 5 cows, 2 goats, 3 horses) could be required to get the CAFO permit. Is this Ecology's intent?

Ecology Response:

The potential exists for such a facility to be required to obtain a CAFO permit if the facility is determined to be a significant contributor of pollutants to waters of the state by Ecology.

8. Lagoon Discharge to Groundwater Requires Permit Coverage

- Why has Ecology changed how it views lagoons? Dairies installed temporary storage ponds (lagoons) in good faith that they would be in compliance. Now Ecology has determined that all lagoons are leaking to groundwater unless they are double lined.
- Where is the proof that all lagoons are leaking to groundwater?
- The permit has shifted the burden of proof for determining discharge to groundwater from lagoons to the dairy producers (from Ecology).

Ecology Response:

Ecology focused on surface water discharges due to year around manure applications to land application fields. Lagoons were an answer to the question of how to limit or eliminate manure applications during the non-growing season in order stop discharges to surface water and improve downstream shellfish beds.

Ecology has attempted to carefully differentiate between lagoon seepage and a discharge to groundwater resulting from lagoon seepage. It is possible that in the right circumstances that a lagoon may have seepage but that seepage does not reach groundwater. In such a circumstance a permit would not be required for discharge to groundwater from the lagoon.

Lagoons are an important part of the manure management system since it allows storage of manure during the non-growing season. However, all lagoon liners have a permeability, which means there is seepage. (NRCS, 2009; Kimsey, 2002; Ham, 2002; MPCA, 2001) During discussions with industry representatives and producers during permit development, Ecology came to understand that clay amended earthen or earthen with a clay lined lagoons designed by NRCS are the most common.

A lagoon constructed according to NRCS standards has a certain amount of seepage. Appendix 10D of Chapter 10 in NRCS “Agricultural Waste Management System Component Design” states that with a lagoon liner permeability rate of 1×10^{-7} cm/sec, seepage will be about 9,240 gallons/day/acre assuming liquid depth of 9 feet, compacted clay liner of 1 foot, initial liner permeability of 1×10^{-6} permeability, and one order of magnitude reduced seepage due to manure sealing.

Documented impacts to groundwater quality from lagoons have been noted by numerous researchers (Erickson, 1994; Garland and Erickson, 1994; Ham, 2002; McNab et al., 2006; MPCA, 2001; Rudolf, 2015; Stephen et al., 1999; Miller et al., 1976; Baram et al., 2012; Baram et al., 2014; DeSutter et al., 2005; Ham and DeSutter, 2000; Koike et al., 2007; Ham, 2002; Reddi et al., 2005; Nicholson et al., 2002;).

The preponderance of evidence from NRCS and literature are the basis for concluding that lagoons have a seepage rate and if that seepage reaches groundwater, it is a discharge that requires a permit. If a facility believes that their lagoon is not discharging, they have an opportunity to make that demonstration. For a more detailed discussion, see the Manure and Groundwater Literature review:

<https://fortress.wa.gov/ecy/publications/SummaryPages/1603026.html>

SI.A Activities Covered Under This Permit

Commenters:

<ul style="list-style-type: none"> • David Powell • Dennis Michelson • Environmental Engineering Associates • John Miller 	<ul style="list-style-type: none"> • King County Department of Natural Resources and Parks • Lummi Indian Business Council • Lummi Nation • Northwest Indian Fisheries Commission 	<ul style="list-style-type: none"> • Patty Martin • Puget Soundkeepers Alliance • Washington Cattlemen’s Association • Western Environmental Law Center
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Range of Comments:

1. Only the combined permit should be available for CAFOs in high rainfall areas (e.g. western Washington) due to: hydraulic continuity, tile drains, seasonally high water tables, and Darcy’s Law.

Ecology Response:

Based on the comments received on the Combined and State Only permits, Ecology has modified the State Only permit to only conditionally authorize discharges to groundwater. No surface water discharges of any type (even agricultural stormwater) are allowed from the production area or land application fields. Therefore, if a CAFO has a discharge to surface water, it will be required to obtain coverage under the Combined permit (except for small CAFOs, see response to Special Condition S2.A comment 5).

2. State Only Permit Should Only Address Groundwater

- The state only permit should only be available to CAFOs that demonstrated that their facility has never had a documented surface water discharge, there are no tile drains, and no hydraulic continuity.
- The state only permit should not address surface water at all.

Ecology Response:

See also Ecology's response to Special Condition S1.A comment 1.

It is unlikely that unpermitted facilities have kept records of discharges, therefore it would be impossible for facilities to prove that they have never had a discharge.

Combined:

The paradigm proposed in this comment would set up a presumption that all facilities have a discharge (or are proposing to discharge) unless they can prove otherwise. This is exactly the paradigm contemplated in *Waterkeeper* (399 F.3d 486 (2nd Cir. 2005)) where the court determined that the permitting authority may not require CAFOs to apply for an NPDES permit based on the potential to discharge or otherwise demonstrate that they have no potential to discharge.

State Only:

Ecology has removed references to allowing surface water discharges from the permit. The State Only permit no longer authorizes any surface water discharges of any type, including agricultural stormwater from land application fields.

3. The Permits Allow Discharges Not Allowed by Federal Requirements

- The permit allows discharges not allowed by 40 C.F.R. § 412.31
- Fact sheet acknowledges no discharge standard but permit language authorizing discharge is confusing, contradictory and should be removed.
- The permit allows the discharge of agricultural stormwater but Ecology does not have authority to authorize discharge of agricultural stormwater. Citing 33 U.S.C. § 1362(14); 40 C.F.R. § 122.23(e).
- The NPDES permit does not ensure that discharges will be limited in the manner required by the federal CAFO Rule or state law, and in fact, it appears that the permit authorizes surface water discharges not allowed under the federal NPDES permit.

Ecology Response:

Ecology disagrees that the permits authorize or allow discharges not contemplated by the Clean Water Act, federal CAFO rules, or by chapter 90.48 RCW.

Combined:

The Clean Water Act requires permits for discharges to surface water from point sources. A CAFO is a point source (33 USC § 1362 (14)). This permit conditionally authorizes discharges to surface water and groundwater from CAFO point sources in compliance with the CWA, federal CAFO rules, and chapter 90.48 RCW.

Some comments cited 40 CFR § 412.31 as a reason for prohibiting **all** surface water discharges from the CAFO production area and land application fields. This is a misinterpretation of the cited regulation because the interpretation only relies on one part of it. 40 CFR § 412.31(a) clearly states that this effluent limitation applies only to the CAFO production area, not land application areas. The misinterpretation also does not account for 40 CFR § 412.31(a)(1) which states:

(1) Whenever precipitation causes an overflow of manure, litter, or process wastewater, pollutants in the overflow may be discharged into U.S. waters provided:

(i) The production area is designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 25- year, 24-hour rainfall event;

(ii) The production area is operated in accordance with the additional measures and records required by §412.37(a) and (b).

40 CFR § 412.31, when taken as a whole instead of partially, allows discharges from the CAFO production area in certain circumstances. Within the permit, this is addressed in Special Condition S3.

The federal CAFO rules in 40 CFR § 412 define the minimum effluent limitations for categories of CAFOs. In general Ecology has applied the standards expressed in 40 CFR § 412 in Special Condition S3 as prohibiting discharges from the CAFO production area except when the CAFO as met two conditions (Special Condition S3.C.1 and S3.C.2):

1. Rainfall events cause an overflow of manure, litter, and process wastewater management and storage facilities designed, constructed, operated, and maintained to contain all manure, litter, and process wastewater including the contaminated runoff and direct precipitation from a 25-year, 24-hour rainfall event; and

2. The production area is operated in accordance with the applicable inspection, maintenance, recordkeeping, and reporting requirements of this permit.

Special Condition S3 satisfies the requirements of 40 CFR § 412.12(b), § 412.13(b), § 412.15(b), § 412.25(b), § 412.26(b), § 412.31(a), § 412.43(a), § 412.44(a), and § 412.45(a). Other permit special conditions satisfy the requirements of 40 CFR § 412.31(a) and § 412.37 related to discharges and record keeping.

Agricultural stormwater discharges do not need authorization under the NPDES portion of the permit because agricultural stormwater is not a point source as defined in 33 USC § 1362 (14) which states:

The term “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. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.

However, chapter 90.48 RCW does not include any provisions for agricultural stormwater. Therefore a precipitation-based surface water discharge of agricultural stormwater, which does not need an NPDES permit, still requires authorization under the state (chapter 90.48 RCW) portion of the permit. In order to do this, the permit addresses the elements included in the federal CAFO rule which would cause a precipitation based surface water discharge from land application fields to be defined as agricultural stormwater. In short, compliance with the permit means that a precipitation based surface water discharge from a land application field is agricultural stormwater.

The federal CAFO rules further define agricultural stormwater in 40 CFR § 122.23(e) for CAFOs as:

. . . For purposes of this paragraph, where the 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 of manure, litter or process wastewater from land areas under the control of a CAFO is an agricultural stormwater discharge.

40 CFR §122.42(e)(1)(vi)–(ix) lists the elements that must be included in a CAFO nutrient management plan. Instead of requiring a separate nutrient management plan document for each permit coverage, the elements required in a nutrient management plan are included as permit conditions with performance objectives. A table was included in the draft Fact Sheet (pages 41 and 42) which included a comparison of the requirements of 40 CFR §122.42(e)(1)(vi)–(ix) and the permit Special Conditions. It is included here for ease of reference.

EPA CAFO Rule and CAFO Permit Section Cross-reference	
EPA Rule Requirement	CAFO Permit Reference
40 CFR § 122.42(e)(1) <i>Requirement to implement a nutrient management plan.</i> Any permit issued to a CAFO must include a requirement to implement a nutrient management plan that, at a minimum, contains best management practices necessary to meet the requirements of this paragraph and applicable effluent limitations and standards, including those specified in 40 CFR part 412. The nutrient management plan must, to the extent applicable: . . .	Special Condition S4
40 CFR § 122.42(e)(1)(i) Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities	Special Condition S4.A Special Condition S4.B Special Condition S4.C
40 CFR § 122.42(e)(1)(ii) Ensure proper management of mortalities (<i>i.e.</i> , dead animals) to ensure that they are not disposed of in a liquid manure, storm water, or process wastewater	Special Condition S4.G

storage or treatment system that is not specifically designed to treat animal mortalities	
40 CFR § 122.42(e)(1)(iii) Ensure that clean water is diverted, as appropriate, from the production area	Special Condition S4.D
40 CFR § 122.42(e)(1)(iv) Prevent direct contact of confined animals with waters of the United States	Special Condition S4.E
40 CFR § 122.42(e)(1)(v) 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	Special Condition S4.F
40 CFR § 122.42(e)(1)(vi) 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	Special Condition S4.A Special Condition S4.B Special Condition S4.C Special Condition S4.J Special Condition S4.M Special Condition S4.N Special Condition S4.O
40 CFR § 122.42(e)(1)(vii) Identify protocols for appropriate testing of manure, litter, process wastewater, and soil	Special Condition S4.H Special Condition S4.I Special Condition S5.B Special Condition S5.C
40 CFR § 122.42(e)(1)(viii) 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	Special Condition S4.J Special Condition S4.K Special Condition S4.N Special Condition S5
40 CFR § 122.42(e)(1)(ix) 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.	Special Condition S4.Q Special Condition S5 Special Condition S6 Special Condition S7.A Special Condition S7.C

As stated earlier, if a permitted CAFO is in compliance with the permit, it will be in compliance with the requirements of 40 CFR § 122.42(e)(1)(i)–(ix). If the CAFO is in compliance with those requirements, and has a precipitation based surface water discharge from a land application field, that discharge is agricultural stormwater which is a discharge allowed by the CWA and authorized under chapter 90.48 RCW through the permit.

Because the comments received indicate there is some confusion about what constitutes agricultural stormwater, Ecology has changed the language in Special Condition S3 to clarify.

State Only:

This permit conditionally authorizes discharges to groundwater only in compliance with chapter 90.48 RCW. Chapter 90.48 RCW does not include provisions for agricultural stormwater to be exempt from permitting requirements. Agricultural stormwater discharges are only conditionally authorized under chapter 90.48 RCW in the Combined permit. No surface water discharges are allowed.

4. Tile drains are a point source, a discharge from which should require a permit. Citing 40 C.F.R. § 412.4(b)(1).

Ecology Response:

See Ecology's response to Special Condition S1.A comment 1.

5. Allowing any discharge is illegal under state and federal law.

Ecology Response:

State and federal law allow discharges in compliance with a permit. RCW 90.48.160 requires that a commercial or industrial operation obtain a permit prior to discharge. The permit limits the amount of waste material that may be discharged keeping it below the limits set by the state water quality standards. By keeping the amount of waste material below the limits imposed by state water quality standards, pollution is not occurring and the discharge is allowable by RCW 90.48.080. The CWA has a similar interpretation.

S1.B Geographic Area Covered

Commenters:

Confederated Bands and Tribes of the Yakama Nation

Range of Comments:

1. The Yakama Nation Reservation is included in the term Indian Country and therefore not subject the CAFO permits. CAFOs operating on Yakama Nation Reservation land must comply with Yakama Nation requirements.

Ecology Response:

Comment noted.

Combined:

Ecology is not the delegated NPDES permitting authority on federal lands or Indian Country. Therefore Ecology limited the area to which the combined permit is applicable.

State Only:

Ecology chose to limit the area covered by the CAFOs permits so that they do not include these federal lands or Indian Country.

S2. PERMIT ADMINISTRATION

S2.A Who Must Apply for Permit Coverage

Commenters:

<ul style="list-style-type: none"> • Abdirahman Mohamed • Agri Beef Co. • Amelia Marchand • Andrew DeHaan • Beavermarsh Farm, LLC • Benjert Farms • Bovine Drive, Inc • Center for Environmental Law and Policy • Center for Food Safety • Citizens for a Health Bay • Colleen Gray • Cory Kuipers • Dave Bader • Dave Lensen • David Van Cleve • Dean & Martha Effler • Dennis Michelson • Dennis Nicholson • Dirk Burgon • Duane Forester • Duane Scholten • Ellie Steensma • Environmental Engineering Associates • F.A. Farm • Form email with Subject Line: Improve the CAFO Permit Rule to Protect Water Quality • Gary Herbert • Harold Wershow • Howard Lyman • James Tuck • Jan Whitefoot • Jason Darling • Jim Dyjak • Jim Hansen • John Miller 	<ul style="list-style-type: none"> • Joy Gilfilen • Julienne Loveall • Karen Steensma • Kathryn Vestal • Kelley Callahan • King Conservation District • King County Department of Natural Resources and Parks • Kip Dunlap • Kirsten Fitterer • Larry Helm • Liz Marshall • Lummi Indian Business Council • Lummi Nation • Lynne Pendleton • Lynne Shamay • Marlene White • Marlin Hutterian Brethren • Martin Kimeldorf • Mike VanBerkum • Monica Persson • Mt. Baker Vet • N3 Consulting • Natural Resource Conservation Service • Northwest Indian Fisheries Commission • Oxbow Dairy • Pam Borso • Paradise Jerseys • Patty Martin • Paula McMinn • Peter Haase • Peter Holcomb • RE Sources for Sustainable Communities 	<ul style="list-style-type: none"> • Rebecca Canright • Rev. Ken Jones • Riverbend Dairy, Inc • Rod & Sharon Tjoelker • Rodgers Engineering • Roger Bajema • Ross Marquardt • Sandy Robson • Senator Warnick, 13th Legislative District • Sherman Polinder • Simplot Land & Livestock • Siobhan Ring • South Yakima Conservation District • Steensma Dairy • Storm Haaven Dairy • Susan Johnson • Swinomish Indian Tribal Community • T Bar T Farms, Inc • Twila Slind • Underwood Conservation District • Van Berkum & Sons Dairy • Washington Cattlemen's Association • Washington Environmental Council • Waterkeepers Alliance • Wesen Organic Dairy • Western Environmental Law Center • Wil-O-Acres Goat Dairy, LLC • Yakima Valley Dairy Federation
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Range of Comments:

1. Coverage Conditions

- Ecology should specify criteria for when a facility should apply for a permit before a discharge occurs.
- Require all large and medium CAFOs to be covered under the permit, instead of only those with proven discharges.

- Permit coverage should apply universally to all medium-to-large Animal Feeding Operations (AFOs), and small AFOs with a potential to discharge.
- All medium and large CAFOs must get permit coverage because they all have discharges. This is because all facilities have lagoons that are designed to leak (referencing Cow Palace v. CARE).
- The permit should be voluntary.
- The permit does not cover an adequate number of CAFO facilities.
- Many facilities lack data to prove they are discharging, and would therefore be exempt from being required to obtain permit coverage despite scientific studies showing that virtually all these CAFO facilities are contributing to the water pollution problem.
- Permit coverage needs to be denied if groundwater is already contaminated at the site of a lagoon.
- Limit animals per acreage ratio.
- Require animal to acreage ration definition to determine CAFO class.
- Close large CAFOs and only permit small operations.
- Make CAFO permit optional except for large (1000+) dairies.
- Re-evaluate how determination is made whether a farm is required to be covered by a permit.
- No one size fits all approach.
- CAFO permit has devastating impacts on 500 cow dairies and smaller.

Ecology Response:

Ecology cannot issue a water quality permit that requires a facility obtain coverage without the facility having a discharge. Studies may show that CAFOs have discharges, but Ecology cannot broadly say that because a CAFO exists, it has a discharge, and therefore must have a permit based solely on studies. This is what EPA attempted to do in the 2005 and 2008 federal CAFO rules. As the courts determined in the Waterkeeper and National Pork Producers cases, permitting authorities (e.g. Ecology) may only require NPDES permits for actual discharges to surface water from point sources, not facilities that propose to discharge, not facilities have the potential to discharge, and not facilities have a risk of a discharge, but actual discharges. Chapter 90.48 RCW is interpreted in the same way in RCW 90.48.160 which requires permits of commercial or industrial operations that have a discharge to waters of the state.

A producer could voluntarily choose to obtain a permit if there has been no discharge from their facility. If a discharge has not occurred, a producer will need to consider their facility and their own level of risk of a discharge and the level of risk they are willing to accept for the possibility of having a discharge without a permit.

Ecology has other tools available outside of the permitting process to address situations identified as posing a risk to water quality before water quality is actually impacted by a discharge. These tools include technical assistance and enforcement tools such as Notices of Violation, Administrative Orders, and Penalties.

Though lagoons have an amount of seepage, in order for that seepage to trigger the requirement to obtain a permit, the seepage must reach groundwater, causing a discharge. A

discharge to groundwater requires a permit. A discharge to ground without a discharge to groundwater does not require a water quality permit. See also the response to special condition S1.A comment 2 and S2.A comment 7.

The groundwater quality standards (chapter 173-200 WAC) provide an antidegradation policy for the impacts discharges may have on groundwater in WAC 173-200-030. In cases where groundwater impacts have already occurred, future discharges must not contribute to further degradation of water quality. Such groundwater discharges in impacted areas must also be no more than the listed groundwater quality limit. See WAC 173-200-040 Table I.

Where Ecology determines that a general permit coverage will not be protective for any reason, Ecology's option is to consider requiring the facility to obtain an individual permit instead of covering the facility under the appropriate general permit.

2. Which Facilities Must Get Permit Coverage

- If Ecology knows which facilities have had discharges or been designated to be significant contributors and are required to obtain permit coverage, Ecology should list them in the permit.
- Ecology did not specifically identify (e.g. by name or address) the facilities that need to be covered by the permit. (Citing WAC 173-226-130(3)(e), WAC 173-220-060, and WAC 173-226-130(5))

Ecology Response:

The requirements of chapter 173-220 WAC do not apply to general permits, only individual permits.

Public notice of a draft general permit under WAC 173-226-130(3) is not required to identify specific facilities (e.g. ABC Dairy, XZY Beef Lot) that will be covered by the general permit. Following the references in WAC 173-226-130(3)(e) to WAC 173-226-130(3)(f)(v) which allows "*A listing or some other means of generally identifying the facilities proposed to be covered under the general permit*" not just a listing of facility names and locations. Ecology has provided the means of generally identifying the facilities proposed to be covered under the general permit in Special Condition S1, Table 2 and Special Condition S2.A.

- ## 3. In the state only permit, the condition that a facility covered by the state only permit must apply for the combined permit after a surface water discharge should have its own subheading for better clarity.

Ecology Response:

State Only:

Ecology has made the change by creating Special Condition S2.A.3 with the heading "*Application for Coverage Under the combined National Pollutant Discharge Elimination System and State Waste Discharge CAFO General Permit*".

4. Significant Contributor of Pollutants

- The permit should define the term "significant contributor of pollutants".

- Ecology should define what a *significant contributor of pollutants* is and how much pollution is acceptable before a facility is a significant contributor.
- Ecology should specify how it will go about making the determination that a facility is a significant contributor.

Ecology Response:

Because of the very broad range of environmental conditions that exist within Washington State and that CAFO's operate in, defining a significant contributor is not feasible. What may be significant in one location may not be significant in another due to variations in characteristics such as water body size, type, flow rate, impairment listing, or the presence of a TMDL.

In general activities such as site inspections, sampling, and gathering available data will be conducted by Ecology in order to determine if a facility is a significant contributor. The determination is a site-specific, case-by-case determination.

5. Small CAFOs

- Exempting small facilities (as defined in the permit) from being required to get permit coverage unless determined to be significant contributors of pollutants should not be based on economic impact to facilities.
- Ecology has not determined that small facilities have less risk of discharge. Ecology should analyze the risk to the environment and economic impacts from small facilities, including to downstream beneficial uses of state waters.
- Ecology should consider broader permit coverage instead of exempting small facilities due to cumulative impacts.
- The permit needs to more clearly state when a small facility needs to apply for the CAFO permit.
- The determination that small facilities (e.g. less than 200 milk cows) do not need to obtain permit coverage ignores the cumulative impacts from these small facilities.
- The determination that small facilities (e.g. less than 200 milk cows) do not need to obtain permit coverage ignores the permitting system in Oregon which requires all facilities to have a permit.
- Ecology should assess the cumulative impacts of exempting small CAFOs and consider broader permit coverage.
- Increase small farm exemption

Ecology Response:

Small CAFOs are not exempt from permitting. There is an alternative compliance pathway through which a small CAFO would be required to obtain permit coverage. The alternative compliance pathway is based on 40 CFR § 122.23(c) and WAC 173-226-120(2) as identified in the Small Business Economic Impact Analysis as a way to mitigate impacts on small businesses.

WAC 173-226-120 defines what is required for an Economic Impact Analysis. WAC 173-226-120(2) defines acceptable methods for mitigating cost impacts from a permit on small (less than 50 employees) businesses:

(2)The purpose of the economic impact analysis is to reduce the economic impact of the general permit on small business by doing one or more of the following when it is legal and feasible in meeting the stated objectives of the FWPCA and chapter 90.48 RCW:

(a) Establishing differing compliance or reporting requirements or timetables for small businesses;

(b) Clarifying, consolidating, or simplifying the compliance and reporting requirements under the general permit for small businesses;

(c) Establishing performance rather than design standards;

(d) Exempting small businesses from parts of the general permit.

One of the methods is establishing differing compliance requirements. Requiring a small facility to be determined to be a significant contributor of pollutants before being required to obtain a CAFO permit is one way of establishing differing compliance requirements. This is also consistent with 40 CRF § 122.23(c) which requires that small CAFOs be determined to be significant contributors of pollutants before being required to obtain a permit.

In order for a small facility to be required to obtain permit coverage the facility must meet the definition of a small CAFO in Special Condition S1 and be determined by Ecology to be a significant contributor of pollutants. Then Ecology may formally designate the facility to be a CAFO. Designation would take place through a formal, appealable action such as a Notice of Violation, Administrative Order, or Penalty.

RCW 90.48.160 requires a permit for an actual discharge. The Clean Water Act is the same - see the Fact Sheet discussions of the Waterkeeper and National Pork Producer court decisions. Permits are required for actual discharges, not for risk of discharge, potential to discharge, or proposing to discharge. Therefore Ecology is not analyzing risks from small facilities within the permit context.

See also response to special condition S2.A comment 4.

6. We would like clarity that a CAFO facility may operate without a permit and allow runoff from the production area to enter into holding ponds on site as long as there is no contact with surface waters or groundwater. I.e., (a catch basin at the bottom of a feed pen).

Ecology Response:

As long as the holding ponds and other structures on the CAFO facility that are used to capture, store, and transport manure, litter, process wastewater, and other contaminants do not incorporate natural surface waterbodies (even if those waterbodies have been re-routed, straightened, or channelized) Ecology considers them part of the CAFOs management systems, not a surface water to which a discharge requires a permit. If seepage occurs from any of the holding ponds or structures and that seepage reaches groundwater, it is a discharge that requires permit coverage, the same as is required for lagoon seepage that reaches groundwater.

7. Lagoons

- Ecology should exempt all lagoons where it can be shown with a preponderance of evidence that they were built to, and have been maintained and operated to basic NRCS Standards and Specifications.

- A lagoon with a soil liner or synthetic liner currently meeting NRCS specifications should qualify as meeting regulatory compliance and no permit should be required.
- Ecology did a study in the early 1990's on the Veldhuis Hornby Rd. Dairy; it was defective in design in that the study period was far too short and coincided with the period of initial construction and was terminated well before average self-sealing and head compression would have greatly reduced the estimated leakage.
- The DeVries study is somewhat of an opposing set of data, as it was taken on a storage basin complex (two storage, one settling basin) over a period of 11 years. These were constructed on top of what had been an irrigated field for the previous 40+ years. The study showed absolutely no indication of any, not even trace leakage, and was terminated when the monitoring wells dried up. This is evidence only of excessive irrigation water diminished over time, and again this study looked at trace matter that would indicate leakage over a long period of time and found none.
- Ecology should focus on the high risk “low hanging fruit” lagoons. The clear preponderance of science based on local conditions [Yakima] and actual research on operating dairies does not support the new standards proposed by ECY in the draft permit. The overall emphasis on storage basins in light of their negligible potential for groundwater impact is especially fruitless when considered in terms of economic impact. Cost to re-excavate and synthetically line storage basins on existing facilities could reach \$1 million for large facilities, and will be proportionately impacting mid-sized and smaller dairies at a time of record low milk prices.
- There is a private study of almost 14 years monitoring wells around a large dairy which have shown absolutely no evidence of leakage, even though this facility houses over 7,000 cows and has both synthetically lined and natural clay lined and compacted basins all built to NRCS standards.
- There is a difference in what happens to lagoon seepage between dry areas of the state and wet areas.
- Manure and/or clay lined lagoons do not leak above the level of regulatory concern.
- The soil beneath a synthetic liner also has to meet a specific compaction rate requirement before the liner can be installed. It is basically a double lined lagoon.
- The permit should contain maximum allowable seepage rates for lagoons (or alternative measurements for potential pollutants).
- It is commonly accepted among practitioners that all waste storage facilities leak to some degree arbitrarily causing a facility to be deemed or exempted from being required to obtain a permit coverage.
- Ecology should specify a level of seepage from a lagoon which does not require obtaining a permit.
- Ecology is asserting that the presence of a lagoon results in degraded water quality.
- The permit should not be required based on an assumption that pollution is occurring in all cases (where a lagoon is present).
- It is only assumed that lagoon leakage reaches groundwater, so leakage is not pollution under RCW 90.48.020.
- Ecology is still presuming that all lagoons leak, therefore all CAFOs without a lagoon that has a double synthetic liner with leak detection between the layers must obtain permit coverage. This is not true.

- A producer can never overcome the presumption of a theoretical discharge to groundwater.

Ecology Response:

Lining lagoons with synthetic liners is not being required as part of the permit. See also responses to special conditions S1.A comment 2 and S2.A comment 1.

The level of seepage which Ecology has determined does not need a permit for a groundwater discharge is seepage from a properly installed and maintained double lined lagoon. A double lined lagoon is the term used by Ecology to mean a synthetically (plastic) lined lagoon with separation between the two synthetic layers which contains a leak/seepage detection and capture system. The separation between the layers is necessary to remove the head pressure from the second (outer) layer. Lagoons not built in this way are not considered double lined and if the lagoon seepage reaches groundwater, it is a discharge that requires a permit.

Ecology made the determination that earthen/clay lined lagoons seep based on the predominance evidence in scientific literature and technical specification manuals available from NRCS which industry has pointed to as the construction standard to which most lagoons are built. See response to special condition S1 comment 8.

Nutrient analysis data from a single deep soil core taken from one of the lagoons at the Haak Dairy has been cited to both confirm and refute that lagoons discharge to groundwater. It does neither. This is a single randomly chosen data point that there is nitrate in the soils below a lagoon at various depths. Private studies and groundwater testing have also been cited (without specifics) to prove that a groundwater discharge is not occurring from a lagoon.

Ecology is required to use only credible data for making policy decisions. Credible data requires quality assurance measures were followed and documented during the collection and analysis of samples. Assurance must be provided that samples are representative, that a sufficient number of samples and parameters were analyzed to meet the stated objectives, and that sampling and laboratory analysis conform to methods and protocols generally accepted by the scientific community as appropriate for use in assessing conditions. Neither the Haak Dairy lagoon data or the private studies and groundwater monitoring meet this criteria.

Ecology cannot use the data for making broad determinations as it is not credible data as required by RCW 34.05.272. Ecology is required to use credible data in its decision making which the state legislature defined in RCW 34.05.272. However, the private studies and groundwater monitoring data could be used by the facility for a specific lagoon on which the data was collected for the determination of if there is a discharge to groundwater from that lagoon requiring a permit.

8. Agricultural Stormwater

- The agricultural stormwater definition used in the permit is inconsistent with federal CAFO rule because the permit does not require a site specific nutrient management plan.

- The definition of agricultural stormwater should be consistent with the definition in the federal CAFO rule, or it should be removed.

Ecology Response:

Combined:

See the discussion of agricultural stormwater in Special Condition S1.A comment 3.

State Only:

This permit does not allow any surface water discharges, including agricultural stormwater.

9. Hydraulic Surface/Groundwater Connection Requiring Combined Permit

- Discharges to surface water via hydraulically connected groundwater requires permit coverage.
- All groundwaters are hydraulically connected to surface water, therefore groundwater is subject to CWA regulation.
- Permit does not require coverage for discharges to hydrologically connected groundwater/surface water.

Ecology Response:

Not all groundwater is hydraulically connected to surface water.

In a situation where over-application of nutrients is occurring which causes a discharge that does not comply with groundwater antidegradation requirements, and it can be shown that the groundwater is hydraulically connected to surface water, then coverage under the Combined permit is necessary.

10. Nutrient Management Plans as an Application Requirement

- The permit should require site specific nutrient management plans meeting the requirements of 40 CFR § 122.42(e).
- The permit does not ensure appropriate agricultural utilization of manure, litter, and process wastewater.
- The permit does not require and incorporate a site-specific nutrient management plan as part of the NPDES permit.
- The State has not adopted technical standards for nutrient management plans consistent with federal requirements.

Ecology Response:

Ecology is using a different permitting paradigm for the CAFO permits which, while satisfying federal CAFO rules requirements, follows a different path for setting effluent limitations.

The federal CAFO rules require that a CAFO develop a nutrient management plan (NMP) and submit that NMP along with their NOI when applying for permit coverage. The NMP must then be reviewed by the permitting authority, be public noticed with comment period, and finally approved by the permitting authority. If the NMP is not adequate, it must be updated and resubmitted to the permitting authority before it is public noticed or approved. This is because the contents of the NMP become enforceable permit effluent limitations (see also the Waterkeeper court decision discussion in the draft permit Fact Sheet). This process creates a situation where each general permit coverage essentially becomes an individual

permit, though many of the requirements are similar across NMPs. This is an administrative burden for both Ecology and permit applicants.

Instead of the EPA process (40 CFR § 122.23), Ecology has taken the general elements of NMPs that would become permit effluent limitations following EPA's process and put them directly into the permits. In this way, the permit becomes the CAFOs NMP. By following the permit, the CAFO is following a NMP (including the calculation and implementation of appropriate nutrient budgets) which meets federal CAFO rule requirements. It has had public notice and comment during the general permit comment period.

Because the permit becomes the CAFOs NMP, it is not necessary for the CAFO to submit a NMP along with its permit application. Instead, Ecology is requiring that CAFOs document in a Manure Pollution Prevention Plan (Special Condition S4.R) what activities, processes, or methods the CAFO is using onsite to meet permit conditions. This creates an environment where the performance objective (permit condition) is known so that compliance can be determined, but allows site specific flexibility for producers to determine how to meet the performance objective on their facility.

See also the table in the response to special condition S1.A comment 3 where permit conditions are aligned with federal rule requirements

40 CFR 123.36 requires that *“If the State has not already established technical standards for nutrient management that are consistent with 40 CFR § 412.4(c)(2), the Director shall establish such standards by the date specified in §123.62(e).”* Paraphrased, 40 CFR § 412.4(c)(2) requires the development and implementation of best management practices for nutrient management and determination of application rates. The permit Special Conditions satisfy this requirement by specifying the methods by which nutrient management planning is done and application rates are developed.

11. A producer cannot measure compliance with discharge limits to groundwater.

Ecology Response:

Since there is frequently a lag time between surface activities and the time it takes for materials (e.g. nitrate) to migrate through the vadose zone to groundwater, the lag time makes it challenging to adapt manure management practices in a timely fashion. Soil monitoring provides quick feedback on the effectiveness of the land treatment system that is reflective of recent practices. It allows the producer to modify their management practices throughout the year. This immediate feedback is the reason why soil is the primary media sampled. However, soil monitoring has limitations. Ecology recognizes that elevated soil nitrate values indicate when groundwater is at risk, but low soil nitrate values cannot provide assurance that groundwater is protected. Therefore, the adaptive management portion of the permits (special condition S4.K) includes a groundwater monitoring component if soil nitrate values are consistently high and manure application continues.

See also the response to special condition S5 comment 1.

12. Number of animals associated with CAFO class determination is lower than other states, placing a burden on industry operations within the state.

Ecology Response:

Ecology is using the same CAFO size categories as are listed in the federal CAFO rules. Additionally, permit coverage is not required unless the CAFO has a discharge, no matter the size.

S2.B How to Apply for Permit Coverage

Commenters:

<ul style="list-style-type: none"> • Environmental Engineering Associates • Jan Whitefoot • Natural Resource Conservation Service 	<ul style="list-style-type: none"> • Northwest Indian Fisheries Commission • RE Sources for Sustainable Communities • US Environmental Protections Agency 	<ul style="list-style-type: none"> • Western Environmental Law Center • Whatcom Conservation District
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Range of Comments:

1. Nutrient Management Plans as Part of Permit Applications

- The permit application doesn't require a site specific nutrient management plan as mandated by federal rule.
- The permit should require that a nutrient management plan, or equivalent, be submitted for review and approval by Ecology along with the permit application.
- The permit does not require the submittal, review and approval by Ecology, and public notice of nutrient management plans as required by 40 CFR § 122.21(i).
- The permit application and permit must provide sufficient information to determine if the CAFO applying for permit coverage meets the requirements of 40 CFR § 122.42(e)(1)(i)–(ix) and 40 CFR § 412.
- The permit should require submittal of the Manure Pollution Prevention Plan along with the permit application.
- Facilities seeking coverage should be required to comply with SEPA requirements
- Existing operations that apply for the permit should be given a specific amount of time for complying with new requirements (e.g. developing a manure pollution prevention plan).
- MPPPs should have the same regulatory requirements as NMPs and not be used in a way to lessen regulatory requirements to prevent pollution.

Ecology Response:

See response to special condition S2.A comment 10.

Special condition S7.A requires that a Permittee submit their MPPP within 6 months of the date permit coverage is issued them. During the time period provided for the Permittee to develop their MPPP, the Permittee is still required to comply with the permit and the performance objectives it contains. Therefore, because the permit is the NMP and because the Permittee is required to comply with the permit even before submitting a MPPP (which just explains how the Permittee is complying with the permit) submittal of the MPPP with the permit application is not necessary.

SEPA review is triggered by an agency (state or local) receiving an application for a nonexempt proposal such as a building permit application for a construction project. The first agency to receive an application triggering SEPA usually is the lead agency and makes the SEPA determination. If the project is not exempt from SEPA requirements, the applicant will need to fill out a SEPA checklist which is reviewed by the lead agency. In most cases, unless an entire new CAFO facility is being constructed, it is likely that activities taking place on a CAFO are exempt from SEPA or are not required to go through the SEPA process again because a SEPA determination has already been made.

Categorical exemptions are covered in WAC 197-11-800. WAC 197-11-800(1)(b)(iii) provides the following exemption from SEPA review requirements: *“The construction of a barn, loafing shed, farm equipment storage building, produce storage or packing structure, or similar agricultural structure, covering 10,000 square feet, and to be used only by the property owner or his or her agent in the conduct of farming the property. This exemption shall not apply to feed lots.”* Also, depending on the local jurisdiction, the size of exempt constructions may be raised up to 40,000 square feet according to WAC 197-11-800(c) and (d).

Issuance of permit coverage is exempt from SEPA review according to WAC 197-11-800(9).

For more information on the SEPA process see *Citizen’s Guide to SEPA Review and Commenting* at <http://www.ecy.wa.gov/programs/sea/sepa/citizensguide/citizensguide.htm>.

2. Publication of Public Notice

- The permit should require public notice and comment of all CAFOs applying for permit coverage, not just new operations.
- The public has the right to comment which has been eliminated by not requiring public notice from existing operations.
- Existing operations should be required to publish public notice of application.
- Existing operations should be required to publish public notice of application.
- The permit does not comply with NPDES public participation requirements.
- By not requiring public notice of application for existing operations, the public and Tribes will be prevented from knowing which facilities are proposing permit coverage and will not be able to provide input on each permit coverage, only the general permit.

Ecology Response

Combined:

Ecology has made a change to the combine permit to require public notice for all applicants applying for coverage.

Public notice and comment requirements for permits are contained in 40 CFR § 122.28(b)(2)(vii): *“A CAFO owner or operator may be authorized to discharge under a general permit only in accordance with the process described in §122.23(h).”* 40 CFR § 122.23(h) states in part: *“. . . the Director must notify the public of the Director’s proposal to grant coverage under the permit to the CAFO and make available for public review and comment the notice of intent submitted by the CAFO, including the CAFO’s nutrient management plan, and the draft terms of the nutrient management plan to be*

incorporated into the permit. . .” Therefore public notice and comment must be done by producers applying for the Combined permit.

Effluent limitations are not being determined on a facility by facility basis. As described in the response to special condition S2 comment 10, Ecology is using permit process that differs from federal CAFO rule process, though the process still meets federal requirements. Since the effluent limitations are contained in the permit and not a separate NMP (as described above), public comment on the effluent limitations took place as part of the public notice and comment on the general permit itself (preliminary draft comment period August 11, 2015 to October 2, 2015, formal draft comment period June 15, 2016 to August 31, 2016). Therefore, since the permit contains the effluent limitations and is the CAFO’s nutrient management plan, only the notice of intent will be available for public comment.

State Only:

This permit is issued under state law (Chapter 90.48 RCW) only, therefore it is not required to follow federal public participation requirements, only those in WAC 173-226-130. Ecology is retaining the differentiation of public notice requirements between existing and new operations.

3. Public Notice Requirements

- What is required for the public notice of a permit application?
- Ecology should develop guidance for what must be included in a public notice.
- Who is responsible for ensuring that the public notice is posted?
- The permit should allow other means of public notice other than just a single newspaper of general circulation.
- Is there a minimum threshold for how many individuals must learn of the proposal through the public notice?

Ecology Response:

WAC 173-226-130(5) requires publication of a public notice for new operations or operations previously under permit for which there is an increase in volume or change in character of the discharge. At a minimum, the public notice must be published twice in a newspaper of general circulation within the county (or geographical region if no general publication exists in the county) in which the discharge is proposed to be made. Ecology may specify additional methods of publication in addition to newspaper notice.

40 CFR § 122.23(h) and § 122.28 do not specify how public notice must be published. Absent other rules for how publication must take place Ecology defaults to requiring public notice for applications for permit coverage based on WAC 173-226-130(5) which is a newspaper notice.

Ecology checks that the public notice was posted through the application review process.

There are no requirements for how individuals must learn of the proposal through public notice.

Combined:

Special condition S2.B.2 requires the permit applicant publish public notice according to the template provided on the permit application (NOI). The NOI was provided during the comment period on the formal draft and was available for review along with the other draft permit documents. Section VI Public Notice of the NOI contains the public notice requirements including providing the dates of publication of the notice and the newspaper in which the public notice will be published.

State Only:

Since Ecology is maintaining the different public notice requirements for new operations versus existing operations as specified in WAC 173-226-130(5), the public notice requirements are specified in special condition S2.B.2.b, which contains the same reference as the Combined permit to using the template required on the NOI.

4. Public Comment Consideration

- What does the statement “At the end of the 30-day public comment period, Ecology will consider any received comments about the applicability of this permit. . .” mean?
- How are public comments considered?
- How does Ecology’s consideration of public comment affect the permit coverage issuance process?

Ecology Response:

After a general permit is issued the conditions are set (not changed) for the 5 year span in which the general permit is effective. Coverages under the general permit are then issued to individual facilities that apply. The same set of permit conditions applies to each coverage. Part of the application process is that the applicant (who becomes the Permittee) publishes public notice of the proposed permit coverage twice. After the second public notice is published, a 30 day comment period starts.

During the public comment period, if comments are received, Ecology reviews and responds to the comments before making a decision to issue or deny permit coverage. All comments will be responded to but the comments that affect Ecology’s decision are the ones which relate to:

- Whether the applicant meets the requirements for permit coverage; or
- Whether the general permit is the appropriate permit under which to issue permit coverage.

5. If existing operations develop compliance alternatives to the 100-foot application setback, the public will not have an opportunity to comment on the alternative.

Ecology Response:

See also response to special condition S4.N comment 4.

Combined:

Buffers and setbacks are considered effluent limitations as part of the federal CAFO rule. Therefore, when setting effluent limitations, public participation through public notice and comment is required. This means that for the combined permit, if a Permitted facility is going to implement the compliance alternative in special condition S4.N.2, the alternative must be

reviewed by Ecology, then be public noticed by the Permittee with a 30 day comment period before approval by Ecology.

State Only:

This permit does not allow any surface water discharges, therefore the state only permit does not require any specific buffers. It does include general performance objectives that any best management practices, buffers, or other technology the producer uses to prevent all discharges from their land application field must meet to comply with the permit.

S2.C Permit Coverage Timeline

No comments received.

S2.D How to Transfer Permit Coverage

No comments received.

S2.E How to Terminate Permit Coverage

Commenters:

• Amelia Marchand	• Washington State Dairy Federation	
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Comments:

1. The draft language indicates that if a CAFO that has a permit reduces its animal numbers to the small size range, that it would automatically have a significant contributor determination, which requires it to keep the permit. The permit should be written so that small facilities are treated the same as other CAFOs by changing “will” to “may”.

Ecology Response:

Ecology has removed special condition S2.E.3. However it has added language to special condition S2.E.3 (S2.E.4 in the draft permit) that purposefully reducing animal numbers to be classified as a small CAFO from a large or medium CAFO is not a way to meet permit requirements for terminating permit coverage.

2. Ecology should include protocols for decommissioning CAFOs

Ecology Response:

Ecology does include requirements for cleaning, repurposing, or decommissioning infrastructure prior to a CAFO terminating permit coverage if the facility is no longer being operated as a CAFO so that the risk of discharge is minimized.

S3. DISCHARGE LIMITS

Commenters:

3. Abdirahman Mohamed	29. Joy Gilfilen	54. Ruth DeBoer
4. Agri Beef Co.	30. Julienne Loveall	55. Sandy Braden
5. Amanda Dickinson	31. Karin Gogins	56. Sandy Robson

6. Amy Hansen	32. Kathryn Vestal	57. Siobhan Ring
7. Arvia Morris	33. Kip Dunlap	58. South Yakima Conservation District
8. Beavermarsh Farm, LLC	34. Leah Boehm	59. Steensma Dairy
9. Bill	35. Lois & Percy Hoekema	60. Stephanie Davis
10. Carol Follett	36. Lummi Indian Business Council	61. Stephanie Smith
11. Colleen Gray	37. Lynne Pendleton	62. Steven Beebe
12. Confederated Bands and Tribes of the Yakama Nation	38. Lynne Shamay	63. Susan Johnson
13. Dave Lenssen	39. Marlene White	64. T Bar T Farms, Inc
14. David Powell	40. Martin Kimeldorf	65. Thurston County Public Health and Social Services
15. Dirk Burgon	41. Mary Baechler	66. Twila Slind
16. Dr. Paul Lindholdt	42. Mensonides Dairy, LLC	67. Washington Environmental Council
17. Ellie Steensma	43. Mt. Baker Vet	68. Washington Farm Bureau
18. Environmental Engineering Associates	44. Natural Resource Conservation Service	69. Washington League of United Latin American Citizens
19. Esther Faber	45. Northwest Indian Fisheries Commission	70. Washington State Department of Transportation
20. F.A. Farm	46. Pam Borso	71. Waterkeepers Alliance
21. Friends of Toppenish Creek	47. Patty Martin	72. Wesen Organic Dairy
22. Gary Herbert	48. Peter Haase	73. Western Environmental Law Center
23. Harold Wershow	49. Puget Soundkeepers Alliance	
24. Howard Lyman	50. Raven's Eye Consulting	
25. James Tuck	51. Rev. Ken Jones	
26. Jan Whitefoot	52. Ronna Loerch	
27. Jason Darling	53. Ross Marquardt	
28. John Miller		

Range of Comments:

1. Effluent Limits

- The special conditions do not qualify as Technology Based Effluent Limitations
- There should be a clear, enforceable numeric soil standards for nitrate and phosphorus.
- The permit should not allow any discharges from the CAFO production area (referencing 40 CFR § 412.31)
- The draft permit does not contain adequate discharge limits. Limits should be enforceable numeric limits.
- The NPDES permit does not ensure that discharges will be limited in the manner required by the federal CAFO Rule or state law. It appears that the permit authorizes surface water discharges not allowed under by the federal CAFO rule.

Ecology Response:

The Fact Sheet did not detail which portions of the permits are technology based effluent limits and which are water quality based. In general, the operations and maintenance portions of the permits are technology-based and the nutrient management portions are water quality based. Technology-based limits include the systems used to collect, store, move, and land apply manure, litter, process wastewater, and other sources of contaminants around the facility. Excluded are the nutrient management planning and adaptive management portions, which are water quality based.

The technology based portions of the permit contain performance objectives and require the implementation of known, available, and reasonable technologies by Permittees to meet those performance objectives.

As discussed starting on page 18 of the Fact Sheet, in many instances, such as with the CAFO permits, it is not possible to set numeric effluent limitations. In these cases non-numeric effluent limitations in the form of performance objectives (e.g. narrative statements or best management practices) are used as effluent limitations.

2. AKART

- The permit authorizes discharges from lagoons without requiring AKART.
- AKART needs to be specified by Ecology not left to the discretion of the Permittee.
- AKART is not specific and cannot be measured which makes compliance with AKART difficult for CAFOs and technical assistance personnel.
- The draft permit does not address AKART.

Ecology Response:

AKART is the implementation of all known, available, and reasonable methods of prevention, control, and treatment of pollutants prior to discharge and may include best management practices. It is the implementation of technology-based approaches to limiting pollutants in discharges and is defined in RCW 90.48.010, RCW 90.48.520, RCW 90.54.020, and WAC 173-201A-020. It applies to technology based effluent limitations. In order for a technology to be considered for adoption as AKART it must be:

- Known,
- Available, and
- Reasonable.

The reasonable portion of AKART represents an economic evaluation to determine if requiring use of a particular technology is economically reasonable for the industry being regulated, which is not dependent on what other industries are doing. Assuming that a technology is known and available, if after economic analysis the technology is reasonable it can be considered AKART once adopted in a permit or regulation. If the economic test determines that the technology is not reasonable, it can't be considered AKART. Ecology has adopted EPA's economic reasonableness tests.

See also response to special condition S3 comment 1

The technology based portions of the permit contain performance objectives which requires the implementation of known, available, and reasonable technologies by Permittees to meet those performance objectives.

3. TMDLs and Impaired (303d listed) Waterbodies

- The permit does not appear to address individual TMDLs or impaired waterbody listings and only assumes compliance. The permit should require CAFOs discharging to waterbodies with TMDLs or impaired listings to take extra steps to prevent pollution.
- The permit should include references to where Permittees and technical assistance staff can find information on TMDLs and impaired waterbody listings.

Ecology Response:

Combined:

Ecology has added permit language to address TMDLs and impaired waterbodies.

If a CAFO does discharge to a TMDL waterbody, the discharge must not exceed the loading allocation for the waterbody. Where TMDLs exist that address CAFOs or a pollutant parameter that may be discharged from a CAFO (e.g. fecal coliform, nutrients), the level of discharge leading to permit violation is set by TMDL, not water quality standards. For example, a TMDL may set the load allocation at 40 cfu whereas water quality standards are 100 cfu. In this example a discharge from a CAFO must not cause or contribute to a fecal coliform test above 40 cfu.

Existing operations are assumed to be contributing to the loading that is cause a waterbody to be impaired if that operation discharges the pollutant for which the waterbody is listed as impaired. Therefore, existing operations may not increase the loading they are contributing to the waterbody. New operations are not already contributing to the loading so they are prevented from discharging the pollutant for which the waterbody is listed as impaired. Once a TMDL is completed, the existing and new operations must comply with the load allocations set by the TMDL.

Groundwater is not included in these statements because Ecology does not have the same types of tools available in the groundwater standards (chapter 173-200 WAC) that are present in the surface water standards (chapter 173-201A).

State Only:

This permit does not allow any discharge to surface water. Therefore, since there are no TMDLs for discharges to groundwater or for hydraulically connected groundwater, TMDLs do not apply to this permit. Additionally, groundwaters are not included in the impaired waterbody (303d) listing, so these listings do not apply to the state only permit.

4. Thresholds for Allowable Discharge

- The permit should clearly define quantities, rates, and times of manure, litter, and process wastewater discharge in order for operators to know what constitutes effective discharge control.
- Methods to model discharge quantities and rates must be established by Ecology in order for designers to develop permit compliant facilities.
- Ecology should develop criteria that establishes thresholds for allowable discharge. The criteria is necessary in order for designers, owners, and operators of CAFOs to adhere to permit requirements.

Ecology Response:

The permits already define when discharges are allowable. Ecology did not make changes to either permit in response to these comments.

Combined:

For this permit, surface water discharge conditions mirror the federal effluent limitation guidelines in 40 CFR § 412. Groundwater discharges are conditionally authorized under Chapter 90.48 RCW provided that the Permittee is in compliance with the permit.

State Only:

For surface water, the threshold is no discharge under any circumstances. Groundwater discharges are conditionally authorized under Chapter 90.48 RCW provided that the Permittee is in compliance with the permit.

5. Causing or Contributing to Violation of Water Quality Standards

- Please explain how a discharge can occur that does “not cause or contribute to a violation of water quality standards.” This statement suggests that compliance with the permit could still result in a water quality violation.
- The statement that discharges may not “not cause or contribute to a violation of water quality standards” could put Permittees in a situation where they are held liable for discharges outside the control of their permit.
- Ecology should remove the provision that discharges may “not cause or contribute to a violation of water quality standards.”

Ecology Response:

Water quality standards are the levels of pollutants that may be in a water that are still protective of all the beneficial uses of that waterbody. A discharge that causes an exceedance of a water quality standard is a discharge that has impacted beneficial uses of that water. A permit conditionally authorizes a discharge as a use of state waters and sets conditions that limit the pollutants in the discharge. These conditions are included in a permit because even though discharges are conditionally authorized, violation of the water quality standards is not authorized when water uses would be impacted.

6. Ecology is exempting Permittees from preventing degradation to water quality because the permit does not comply with antidegradation requirements. Ecology should gather information to perform an antidegradation analysis to determine extent of degradation occurring.

Ecology Response:

The antidegradation section of the Fact Sheet starting on page 21 discusses antidegradation in the CAFO permits in detail. In short, antidegradation requirements are different for surface and groundwater. An antidegradation analysis is required for surface waters (provided in the Fact Sheet). Existing and future beneficial uses must be protected for groundwater.

The nutrient budgeting, land application, and adaptive management portions of the permit limit the amount of nutrients that will be land applied, limiting excess nutrients left at the end of the growing season. Limiting excess nutrients will limit the amount of nutrients available to leach to groundwater (which is also greatly dependent on environmental conditions) which will reduce groundwater impacts to protect existing and future beneficial uses.

S4. MANURE POLLUTION PREVENTION

S4.A. Production Area Run-off Controls

Commenters:

<ul style="list-style-type: none">• Amelia Marchand• Benjert Farms• Dennis Nicholson• Friends of Toppenish Creek	<ul style="list-style-type: none">• Howard Lyman• John Miller• King County Department of Natural Resources and Parks	<ul style="list-style-type: none">• RE Sources for Sustainable Communities• Washington Cattlemen’s Association
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Range of Comments:

1. Production area run-off

- The permit should require that CAFOs near drinking water sources implement extra BMPs or technology to protect the drinking water source.
- Special condition S4.A should not be included in the state only permit because this permit does not authorize surface water discharges. This topic is covered sufficiently by the paragraph following Special Condition S2.A.2.
- Ecology should clarify that capturing runoff from the CAFO production area to holding ponds or catch basins (not natural surface waterbodies) is not a discharge and allowed by the permit. As currently written, the permit is vague on this and extra clarity would be helpful.
- Dairy composting operations are poorly and inadequately addressed.

Ecology Response:

Ecology permits protect all waters equally. Ecology does not have authority to require additional protections to one area because it is already impacted. Extra protections for such areas are in the form of impaired (303d) waterbody listings and TMDLs which are effluent limitations for permits.

Preventing discharges from the production area applies to all locations that are considered to be production area (see permit definition of production area) including composting areas if they are part of the CAFO facility, even if used by a third party.

See also response to special condition S2.A comment 6.

Combined:

The requirements for when discharges are allowed from the CAFO production area are already captured by special condition S3. Therefore, duplicate language was removed from this condition.

State Only:

Water that has not come into contact with contaminants generated by a CAFO does not need to be collected and stored. To reduce the necessary storage volumes that must be maintained by the CAFO, directing this water away from the facility is encouraged. Though this permit does not authorize surface water discharges of water that has come into contact with contaminants generated by the facility, directing water that has not come into contact with facility generated contaminants is not considered a surface water discharge and therefore

allowable. If this was not allowable, facilities would need to construct bigger storage facilities in order to have enough capacity to handle the extra water collected.

2. Require Lagoon liquid level monitoring

Ecology Response:

A Lagoon depth gauge is required by special condition S4.B.1.d. However, Ecology does not consider lagoon depth to be a useful monitoring requirement as depth gauges are not accurate enough for determining land application amounts, and are likely to change frequently as materials are added to a lagoon or removed for land application and other processes.

S4.B. Manure, Litter, Process Wastewater, and Feed Storage

Commenters:

<ul style="list-style-type: none"> • Abdirahman Mohamed • Agri Beef Co. • Art & Theresa Mensonides • Arvia Morris • Barb Drake • Beavermarsh Farm, LLC • Beth Dannhardt • Bill • Caleb Laieski • Carol Follett • Chris Bevers • Colleen Gray • Confederated Bands and Tribes of the Yakama Nation • CROPP Cooperative, Organic Valley, Organic Prairie • Cynthia Cannon • David Asher • David Friscia • David Powell • Dean & Martha Effler • Dennis Nicholson • Diane Tilstra • Dr. Paul Lindholdt • Ellie Steensma • Evernook Valley Milk, LLC • F.A. Farm • Form email with Subject Line: Improve the CAFO Permit Rule to Protect Water Quality • Form email with Subject Line: Please Protect Drinking Water From Factory Farm Pollution • Form Email with Subject Line: Please protect our drinking water from harmful manure pollution 	<ul style="list-style-type: none"> • Form email with Subject Line: Please support stronger CAFO rules • Gary Herbert • Greg Bode • Hayley Mathews • Howard Lyman • James Tuck • Janet & Steve Keller • Jason Darling • Jim Leuba • Joel Green • John Roskelley • Kate Packard • Kathleen Schormann • Kathryn Vestal • Kerry Peterson • King County Department of Natural Resources and Parks • Landau Associates • Leah Brady • Lois & Percy Hoekema • Lovel Pratt • Lynne Pendleton • Lynne Shamay • Markus Rollinger • Marlene White • Martin Kimeldorf • Maude Laslie • Mensonides Dairy, LLC • Michael Craven • Michael Sennett • Mindy Roberts • N3 Consulting • Nancy Chapa • Natural Resource Conservation Service 	<ul style="list-style-type: none"> • OneAmerica • Paula McMinn • Randy Honcoop Farms • Raven’s Eye Consulting • Robert Baker • Ron Reimer • Ronna Loerch • Ross Marquardt • Ruth DeBoer • Sandy Robson • Senator Warnick, 13th Legislative District • Siobhan Ring • South Yakima Conservation District • Steensma Dairy • Steve Groen • Steven Beebe • Susan Johnson • Thurston County Public Health and Social Services • Turner & Co. • Washington Cattlemen’s Association • Washington Environmental Council • Washington Farm Bureau • Washington League of United Latin American Citizens • Washington State Dairy Federation • Wesen Organic Dairy • Whatcom Conservation District • Yakima Valley Dairy Federation
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Range of Comments:

1. Lagoon seepage

- Department of Ecology needs to provide a peer reviewed and published statistical study backing up the likelihood of leakage from storage lagoons before asserting the statement “all lagoons leak”.
- Require all manure lagoons to use synthetic liners with leak detection.
- Provide proof of manure lagoon leakage before requiring heavy and burdensome regulations.
- The Hauk data taken by parties adverse to the dairy industry in litigation strongly supports no leakage of significance, even from this unlined basin.
- The Department of Ecology ignored the Department of Health’s recommendation that unlined manure lagoons must be subject to NPDES permit.
- In a study conducted by Ecology of nitrate contamination in the Sumas-Blaine Aquifer, Ecology (2012) reported that leakage from lagoons contributed only 1.2% of the estimated annual nitrogen input to the land and subsurface of the SBA compared to 65% from manure applied to fields.
- In California, where one of the largest studies ever conducted to evaluate the impact of lagoon leakage on groundwater quality is nearing completion, researchers have already concluded that manured fields are the primary source of nitrogen input to groundwater. The study included several years of groundwater monitoring in 443 monitoring wells at 42 separate dairies. The scope of this work included a lagoon perimeter hydrogeologic evaluation at twelve sites (Luhdorff & Scalmanini 2015).
- The draft permits appropriately focus manure management efforts and limited resources on requirements that address the proper application of manure to fields instead of lagoon seepage. A number of factors contribute to this limited contribution including:
 - The well-documented, natural self-sealing effects that manure imparts on lagoon bottoms which typically results in whole-lagoon seepage rates of less than 2 millimeters per day
 - The small area that lagoons occupy relative to manured fields
 - Research (Barnam et.al 2012; Ham 2002) that demonstrates significant removal of nitrate by transformation to harmless nitrogen gas through denitrification that occurs within the upper few feet of sediment below a lagoon.

Ecology Response:

The draft permit fact sheet provided 41 references (starting on page 95) related to looking at how much seepage occurs from lagoons. In addition, the Manure and Groundwater literature review looked at many of the same references (plus additional) in summarizing the current state of the science regarding seepage from earthen manure lagoons.

See also response to special conditions S1 comment 8 and S2.A comment 7.

2. Lagoon liners

- Do not implement blanket requirements for lagoon liners.
- Earthen clay is inadequate for holding liquid manure.
- Concern over number of unlined CAFO manure lagoons in proximity to Puget Sound.

- Require facilities to use NRCS designed facilities
- Restore the requirement to line manure lagoons.
- Require large and medium CAFOs to use cost-effective and science-backed technology to reduce pollution, such as double liners for manure lagoons.
- A temporary storage pond with a soil liner or synthetic liner currently meeting NRCS specifications should qualify as meeting regulatory compliance and no permit should be required. The soil beneath a synthetic liner also has to meet a specific compaction rate requirement before the liner can be installed. It is basically a double lined pond.
- Excluding the requirement to construct synthetic lagoon liners is appropriate based on a number of recent studies which determined that leakage from manure lagoons plays a relatively minor role in overall contribution of nitrates to groundwater relative to the contribution from manured croplands.

Ecology Response:

Ecology is requiring lagoons which will be constructed, expanded, or having major refurbishments done after the issuance of the permit or that will be modified or retrofitted, that the as-built permeability of the lagoon must not exceed 1×10^{-6} cm/s.

All lagoon liners have a seepage rate (e.g. earthen and synthetic). This seepage may reach groundwater which is a discharge that requires a permit. A double synthetically lined lagoon with a leachate collection system between the two synthetic layers is designed to capture the wastewater that moves through the top liner and then is routed back into the lagoon. Ecology has determined that the seepage from such a lagoon is so small that this construction design is considered a non-discharging lagoon. However, due to the economic constraints, Ecology is not mandating any particular lagoon construction design. The goal with specifying a permeability is to minimize the seepage in order to minimize the impacts to groundwater for those lagoons that do discharge.

Because Ecology does not have data to conclusively demonstrate that all lagoons are discharging to groundwater (this is different than stating that lagoons build to NRCS standards have a seepage rate), Ecology is instead gathering information this permit cycle to be used to determine the risk that lagoons pose to groundwater. See special condition S7.B in the permit and factsheet for a discussion of the One-time lagoon report (replaced with Existing Lagoon Assessment).

See responses to special condition S1 comment 8, S2.A comment 7, and S4.B comment 1.

3. AKART for Lagoons

- Require AKART for manure and process wastewater storage.
- Require use of cost effective technology.
- Reference to Dam Safety requirements should be included for liquid waste storage structures that must meet these separate requirements.
- Additional specifications are needed to stipulate minimum distances from groundwater wells for structures such as waste storage ponds and other structures.
- Ecology should require the use of cost-effective technology, such as synthetically-lined manure lagoons, which could dramatically reduce pollution

Ecology Response:

See response to special condition S3 comment 2 and S4.B comment 2.

4. Lagoon storage capacity

- Regulations for manure holding time requirements will require additional lagoons and force increased holding capacity.
- Farms today generally have adequate storage for normal years, but storage systems must be able to handle anomalous challenges such as wetter years, like the La Niña pattern years of 2010-2012 which were marked by late and very wet spring weather. The exceptionally wet springs of 2011 and 2012 pushed storage systems to their capacity. The permit draft has new restrictions on applications. These restrictions will result in the need for producers to add storage to store manure longer.
- The statement “Permittee must maintain adequate storage space,” is too vague. Ecology should elaborate on this statement to ensure it is not arbitrarily applied. Ecology should add additional language specifying what adequate storage is while still allowing flexibility for the producer to determine what is necessary for their operation.

Ecology Response:

The industry representatives and producers Ecology spoke with indicated that producers have enough storage for the period when crops do not need nutrients from manure, litter, process wastewater, or other organic by-products.

Federal CAFO rule requirements (combined permit) are such that the only time that a CAFO may discharge from its production area is when it is designed, operated, and maintained to contain all contaminated run-off and direct precipitation to its storage and still have storage volume to handle a 25-year, 24 hours storm event. The state only permit allows no surface water discharge from the CAFO at all. Land application as a way to prevent discharges from the production area is not an appropriate management method during the times of year when crops are not going to utilize the available nutrients (e.g. during winter).

While similar in processes, all CAFOs are managed somewhat differently, and have different environmental conditions with which to contend. Ecology is not requiring the construction of new storage structures, it is up to the Permittee (and their technical assistance) to assess the CAFO’s conditions and determine that there is enough storage and if not, how the Permittee will handle the excess manure, litter, process wastewater, or other organic by-products that are generated.

5. Lagoon breach response

- The requirement to have backup plans to arrest/contain/recover discharge from a liquid waste storage structure failure lack sufficient detail for practitioners to meet permit criteria.
- There are cases in which containing the remaining manure in a lagoon from a leak or a breach may be unachievable. It is recommended to describe in detail the procedure for addressing a leak or a breach and the criteria that would need to be met.

Ecology Response:

A catastrophic lagoon wall breach is not expected, but as the Bartelheimer lagoon breach several years back showed, it can happen due to unknown and unforeseen circumstances. The

requirement is purposefully open-ended due to the varying circumstances in which lagoons have been built and how they are managed. Generally, the requirement is asking that the Permittee consider how they would respond to an event occurring in which a lagoon wall failed. That may be as simple as stating what notification efforts will be and what cleanup efforts may look like after the fact, or in the case of a lagoon which has size and elevation characteristics that put it under the purview of Dam Safety, something more involved.

6. In the near future, some dairies believe they can clean and treat water to Ecology's Class D reclaimed water specifications. Ecology should consider exempting storage basins filled with Class D water, and also the records keeping associated with land application of Class-D water as it will have almost no nutrient value.

Ecology Response:

Comment noted. At this time only the 1997 Water Reclamation and Reuse Standards include Class D specifications. The reclaimed water rule currently under development does not include Class D standards.

7. Provide incentives for farmers to utilize manure digesters.

Ecology Response:

Comment noted. It is beyond the scope of the permit to consider incentives.

8. Not all leachate from solids can be feasibly collected and stored with other liquid manure. Animals' hooves frequently create unavoidable potholes in corral spaces and other surface imperfections exist during wet winter periods when surface maintenance measures are impractical.

Ecology Response:

Comment noted. In such a case where hoof prints are holding manure, it is expected that the manure would not be stored in a lagoon.

9. Comments on special condition S4.B

- Ecology should specify minimum standards of, and acceptable methods for determining seepage.
- The permit requires that a Permittee have adequate storage for all manure, litter, process wastewater, feed, and any other sources of pollutants on-site during the storage period for the area where the CAFO is located. How is the storage period determined? What is the reference (guidance document) for determining storage period?
- Who determines adequate storage time? Ecology should utilize application timing recommendations to meet crop needs while protecting surface waters from runoff from specifications built from existing practice standards such as NRCS planning process, NRCS 590 Nutrient Management practice.

Ecology Response:

The message that Ecology received from industry representatives, producers, and technical assistance personnel is that producers have plenty of storage. If a Permittee is concerned that they may not have enough storage, the Permittee should consider their operations and management in conjunction with the land application restrictions (special condition S4.J) to determine when land application may start and must stop. Based on that assessment, the Permittee should then determine if they have adequate storage. The range of operations,

management styles, and environmental conditions is such that Ecology could not set a standard storage period.

See also special condition S4.B comment 2.

10. Comments on special condition S4.B.1.b.

- The statement “controlling vegetation and animals” is too vague. Ecology should provide clear requirements for what is expected and allow the public to comment on these requirements again. For example it is unclear what animals are being controlled and how vegetation must be controlled.

Ecology Response:

Ecology disagrees that the language is unclear and has not modified it. The point of the condition is to prevent damage to the lagoon from animal activities, whether that is pest animals such as rodents burrowing into the lagoon embankments, or from grazing animals whose weight may damage the structure if they walk into certain areas. Controlling vegetation is similar. Trees and large weeds (e.g. thistle) have roots that can damage the liner or structure of the lagoon. The Permittee should be aware of what can damage the structure and take steps to prevent damage to the structure.

11. Comments on special condition S4.B.1.c.

- Does Ecology have minimum standards and accepted methodologies for measuring and establishing whether or not a liquid waste storage facility is leaking?
- Special Condition S4.B.1.c. Liners other than geomembranes, also can be damaged, and the resultant situation can markedly increase the percolation of water and waste substances beyond the intended design of systems. This should be elaborated here as well where liner repair is discussed.
- Special Condition S4.B.1.c. Detection of leaks for all systems is a particularly onerous, and potentially expensive, endeavor that entails either precision monitoring that highlights all aspects of a water/pollutant mass balance or periodic evacuation of all waste storage facility contents to retest liner integrity and functionality.

Ecology Response:

Comments noted. The technology used to construct a lagoon and to minimize seepage is how groundwater impacts from lagoons that do have a discharge to groundwater (versus those that just have a seepage not reaching groundwater) are limited. This condition requires that the Permittee maintain their lagoon in working order. Due to the various design and construction standards used to build the lagoons currently in use, this condition is descriptive of the expected result, and does not proscribe specific leak detection and repair methods, so that Permittees may see to maintenance of their lagoons as appropriate based on the design and construction of the structure.

12. Comments on special condition S4.B.1.c.

- There is no definition for the term “periodically”. Ecology should clarify what is meant by periodically but allow the producer to have discretion for when volume maintenance is performed.

Ecology Response:

Different lagoons are built to different standards, and the appropriate volume maintenance period may or may not be known by the Permittee. This requirement is general to allow for different volume maintenance schedules depending on the construction of the lagoon and local conditions.

13. Comments on special condition S4.B.1.d.

- Freeboard requirements for liquid storage structures vary. See for example Washington State Department of Ecology Dam Safety Guidelines. Ecology should change the language so that the lagoon still has design freeboard instead of 1-foot of freeboard.

Ecology Response:

Ecology agrees and has made this change. However, because of the differences in design freeboard Ecology is requiring that the Permittee provide the design freeboard of each of their lagoons on the permit application.

14. Comments on special condition S4.B.1.f.

- Should specify minimum allowable levels of nutrient escape in order for decommissioning plans to be designed and carried out properly (e.g. what constitutes high nutrient soils).
- The permit discusses high nutrient soils and the need to dispose of them properly when waste storage structures are decommissioned. This requirement may be onerous and prohibitively expensive since these volumes and their respective depths underground may be extensive after a waste storage pond has been in operation for years. Even the process of determining appropriate natural background nutrient levels in soils is not trivial. Furthermore, well-designed liners that have been maintained may serve as the best alternative in preventing additional pollution when left intact in some cases. Ecology should further develop decommissioning requirements to match conservation design strategies (e.g. NRCS) that minimize pollution and consider the site conditions.
- S4.B.1.f.iv requires grass as the erosion control vegetation. It is possible that the site may be converted to a different use such as an orchard or heavy use area. Ecology should consider changing the sentence to “species and land management which will prevent erosion”.

Ecology Response:

Ecology modified this requirement to only require soils above grade to be land applied in accordance with the Permittee’s nutrient budgets. High nutrient soils are those that are part of the lagoon that are expected to contain nutrients that moved with seepage.

This requirement was also changed to specify that land application must be in accordance with nutrient budget instead of MPPP in order to make requirement clearer.

Ecology has changed the language to allow the use of site appropriate plant species for the type of land management implemented to prevent erosion.

15. Comments on special condition S4.B.2

- Treats silt feed and leachate as a pollutant and the runoff from feed areas is required to be stored and treated the same as confinement area runoff (in a lagoon). In instances

where runoff from feed storage does not have high BOD or pathogen counts, is treatment with a filter strip acceptable?

- Many producers use filter strips to treat the lightly contaminated run-off from feed storage areas. Containing this run-off is not in the capacity of many lagoons. Ecology should consider allowing the use of filter strips for lightly contaminated run-off.
- What about an engineered vegetative treatment area/filter strip designed to filter runoff from leachate or manure? Many producers divert the water (when dilute or very low nutrient value, particularly leachate) to a grassed area for treatment rather than collect the water. The extra volume was not accounted for in storage volume and may require installation of new storage facilities.
- The draft permit requires all water from feed storage areas be captured and contained in a lagoon. Some producers use catchment filter areas such as NRCS Practice Code 393. We suggest an additional option for use of filter strips where appropriate. Without additional options, some farms have feed storage areas remote from lagoons and may not be able to route to lagoons. Other farmers use treatment and filter areas without issue, yet this mandate could add significant volume of water to storage systems, requiring additional storage.

Ecology Response:

Feed storage, even at a remote location is considered part of the CAFO production area. Spilt feed and leachate are potential pollutants that may not be discharged except in compliance with permit requirements.

Ecology has modified the permit language to allow the use of filter strips. However, if filter strips are used the Permittee must have documentation to show that the filter strip will effectively utilize the nutrients in any run-off. If the filter strip is part of a land application field, the nutrients from the leachate or other run-off directed to the strip must be accounted for in the yearly nutrient budget and must follow the restrictions on land application in special condition S4.J.

S4.C. Other Above and Below Ground Infrastructure

Commenters:

• Northwest Indian Fisheries Commission	• RE Sources for Sustainable Communities	• Washington State Department of Agriculture
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Range of Comments:

1. "Timely manner" for repairs and replacements to infrastructure should be quantified.

Ecology Response:

If the infrastructure that needs repair or replacement is causing a discharge not authorized by the permit, the repair or replacement needs to take place immediately as such discharges are a violation of permit conditions and subject to enforcement by Ecology. If the infrastructure that needs repair or replacement is not causing a discharge but will when next used, repair or replacement needs to take place before the infrastructure is next used. If the infrastructure that needs repair or replacement is not causing a discharge and will not cause a discharge during the next use, then repair or replacement may take longer.

2. Please clarify what “if applicable” means, including when “testing” will be required versus recommended. When infrastructure has previously contributed to a discharge to waters of the state, The Dairy Nutrient Management Program has required pressure testing of all underground lines and valves to convey manure and process waste water to storage.

Ecology Response:

The “if applicable” clause refers to whether testing of infrastructure is pertinent to a specific structure. For example, pressure testing of underground lines is applicable, but testing a concrete curb which directs the flow of run-off when it can be visually observed is not applicable.

3. Tile drainage lines

- Ecology should prohibit all pollutant discharges from tile drains, not just those associated with "physical failure of infrastructure."
- The permit does not specify AKART, or require adequate treatment of the discharge of pollutants from the land application area specifically from tile drains.
- The permit only requires that operation and maintenance of tile lines ensure it is in "proper working order." Proper working order for a tile line could result in quick conveyance of pollutants such as excess nutrients, and therefore this permit condition does nothing to prevent causing or contributing to a violation of water quality standards. Ecology should specify pollutant control practices for conduits such as tile drains, including their potential elimination.

Ecology Response:

See response to special conditions S1.A comments 1 and 2, and special condition S4.N comments 6 and 7.

S4.D. Diversion of Clean Water

Commenters:

<ul style="list-style-type: none"> • N3 Consulting • Natural Resource Conservation Service 	<ul style="list-style-type: none"> • Washington Cattlemen’s Association • Washington State Dairy Federation 	<ul style="list-style-type: none"> • Whatcom Conservation District
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Range of Comments:

1. Special Condition S4.D should be removed from the state only permit because this permit does not authorize surface water discharges.

Ecology Response:

See response to special condition S4.A comment 1.

2. Diverted clean water can lead to other undesirable outcomes (e.g. soil erosion, sediment, flooding in locations previously not subject to flooding). Better clarification and explanation of these issues should be mentioned such that proper planning and any necessary design of systems properly deals with these other potential water quality concerns.

Ecology Response:

Ecology has added a statement that diverted clean water must go to a location that is able to handle the volume of clean water generated without causing other water quality problems.

3. Other contaminants and storage

- The second line contains the words “other contaminates.” Ecology should clarify what is meant by other contaminates. This verbiage could be read to mean gutter water with dust or bird droppings would have to be routed to a lagoon.
- This will require new calculations and requirements and be unnecessarily cumbersome.
- This will require the installation of additional storage to capture run-off from minimally contaminated areas at a very high cost for minimal water quality benefit.

Ecology Response:

Other contaminants are those generated by the facility that are not captured by the terms manure, litter, feed, process wastewater, or other organic by-products. These could include oils, grease, or coolants from equipment maintenance.

Diverting clean water away from a CAFO production area should not cause the CAFO to need to install additional storage but will cause the need to ensure clean water is diverted appropriately to prevent unintentional impacts (e.g. erosion, flooding).

S4.E. Prevent Direct Animal Contact with Water

Commenters:

<ul style="list-style-type: none"> • Kip Dunlap • Lummi Indian Business Council • Natural Resource Conservation Service • Northwest Indian Fisheries Commission 	<ul style="list-style-type: none"> • RE Sources for Sustainable Communities • Washington Cattlemen’s Association • Washington Farm Bureau 	<ul style="list-style-type: none"> • Washington State Dairy Federation • Washington State Department of Fish and Wildlife Region 3 • Whatcom Conservation District
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Range of Comments:

1. What areas are covered by this permit condition
 - Special Condition S4.E should be removed from the state only permit because this permit does not authorize surface water discharges.
 - Requirements to remove animals from streams are absolutely necessary for resource protection.
 - The draft permit language is ambiguous and creates uncertainty. We suggest either current EPA, Idaho permit, or Oregon permit language. See page 110 of the Oregon 2016 permit at <http://www.oregon.gov/ODA/shared/Documents/Publications/NaturalResources/NPDESGeneralPermit.pdf>.
 - This section must be revised and limited to only cover the confinement area. We strongly believe there can be no reference to pastures in this permit because it is outside the scope of what these permits are intended to cover. The federal Clean Water Act and, indeed, the framework of these draft permits are designed for animal feeding operations. Any

mention of pastures or agricultural activities outside the scope of the confinement area should be removed from this permit.

- The language in this draft permit expands the federal EPA permit language to require prohibiting all livestock, both in confinement areas (as the Idaho and EPA permits state) and on the outside of the confinement area from contacting surface waters or “conduits” to surface water (except for “puddles” that do not drain anywhere). Most producers have worked with conservation districts and the Washington State Department of Agriculture to eliminate, restrict, or control access to real, identifiable surface waters. However, Ecology’s use of “waters of the state” rather than “waters of the US” creates a dilemma and uncertainty for farmers. We are very concerned that farmers will not know when they are compliant; therefore, farmers cannot know the costs of compliance or when they may face enforcement or the risk or threat of litigation. An example of the differences between federal and state definitions is this excerpt from a note sent by Jon Stormon at Ecology to the livestock workgroup in 2005.
- In Feb 2005, the Dept. of Ecology Issued a “Notice of Penalty No. 1953” to Evans Fruit Company, Cowiche, WA, for applying fruit packing wastewater to snow. An appeal of this action may come in the future but has yet to be heard in the PCHB. I'm sorry about my lack of accuracy. What I have learned, I believe supports the argument that snow can be considered waters of the state of Washington and that any person discharging polluting matter to snow may face enforcement actions. Mr. Stormon also cites this PCHB decision as evidence that any water including snow is waters of the state: (<http://www.eluho.wa.gov/Global/RenderPDF?source=casedocument&id=1185>).
- WOTUS does not include things like snow as water, yet farmers may be found to be in violation of polluting waters of the state if our cows are out grazing and it snows.
- The language in the draft is a change from federal EPA language and different from the Idaho permit used as one of the EIA baselines. See https://www3.epa.gov/region10/pdf/permits/npdes/id/cafo_fp_idg010000_wapps.pdf.
- Specifically, the EPA, Idaho, and Oregon permits say animals in confinement areas may not have contact with waters of the US. This is the EIA baseline, and it is also required for compliance under RCW 90.64. However, the draft language on page 15, while confusing, indicates that (all) livestock must not come in contact with surface water or conduits. It does not say confined livestock, so all livestock must be restricted from access to any land that might be “waters of the state” or land that is a “conduit to surface waters.” This change must be analyzed. It is difficult for us to calculate the losses because of the uncertainty between waters of the US and waters of the state, but costs must be estimated for farmers who, under the draft permit, could no longer use pasture land with dry/seasonal ditches, swales, gullies, depressions, historically pastured seasonal “wetlands,” hillsides or fields with slopes, or anything that could drain to “waters of the state.” The cost of rebuilding fences alone could range from thousands of dollars for small farms to hundreds of thousands of dollars for larger farms.
- This section has been changed from the preliminary draft. Please re-insert this language: On grazing areas that are part of the CAFO, livestock must be fenced out of surface water, vegetative buffers, and conduits to surface water by a minimum of 35 feet from the top of the bank. Animals may not be allowed access to buffers or conduits to surface water.

Ecology Response:

Fields used only as pasture for grazing livestock are not part of the production area or land application fields, so this section would not apply. If the field is used as pasture and as a land application field, then this requirement does apply. Discharges from grazing pastures are not regulated by the CAFO permit, but are subject to Ecology's non-point source authority under RCW 90.48.080.

2. Prevent Direct Animal Contact with Water: at what point does a puddle become a waste storage facility? Stipulation of a maximum allowable puddle volume and/or cumulative volume per acre might be worth creating to disallow small temporary ponds in corrals that can literally take months to evaporate and/or percolate the water into the ground. In addition, corrals can be constructed and maintained to readily drain water and thus avoid sloppy, wet low areas that also set under saturated conditions for month on end with highly contaminated water (much the same as a waste storage facility but with no liner. Addressing this would go a long way toward protecting water sources from potential pollution.

Ecology Response:

See also response to special condition S4.E comment 1.

Combined:

Puddles/standing water areas which occur in low spots within the production area are expected to a degree and must not discharge to natural surface waters or conduits to surface waters. Such a discharge is not authorized by the permits. However, livestock are not expected to be excluded from these areas.

Puddles/standing water areas on a land application field would indicate saturated soil conditions, so land application of manure, litter, or process wastewater would most likely not be allowed by special condition S4.J. If the puddles/standing water areas are draining to surface waters it must not be through channelized flow, which would indicate a discharge not allowed by the permit.

State Only:

There must be no discharge from the production area or land application fields to surface waters or conduits to surface waters.

3. Please clarify what conduits to surface water are. For instance, if a swale is a "conduit" does that mean that grazing a swale in a field during the dry months for pasture management is not allowed? Or does that fall under the "temporarily housed" parameter which allows grazing?

Ecology Response:

See response to special condition S4.E comment 1. Even though in some instances grazing in a swale is not covered by the permit, the producer still has the obligation to prevent discharges.

4. What is considered "temporary" Is 9 months of the year temporary? Or is a few days per week for 6 months "temporary"? Please define for clarity and to prevent future reinterpretation and confusion by landowner. Referring to livestock temporarily on land application fields.

Ecology Response:

Generally, this would mean that fields are used for land application during the growing season, but livestock are housed on them during the non-growing season such as for grazing crop stubble after harvest.

S4.F. Chemical Handling

Commenters:

• Natural Resource Conservation Service	• Washington Cattlemen’s Association	
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Range of Comments:

1. There are many potential chemicals that fall under this section of the permit. It would help owners/operators and designers were there a better definition of chemicals or a reference to an expansive list of what they may be, such that proper designs, operation, and maintenance systems can be developed if necessary.

Ecology Response:

Ecology is not listing the chemicals to which this section applies because 1) it applies to all chemicals used in CAFO operations, 2) chemical names and formulations change frequently, and 3) new products are constantly being introduced to market. Ecology could not realistically account for the chemicals used by all producers and the differences between producers.

2. This section is not needed and should be removed from the permit. The items addressed in this section are already regulated by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and as a result create duplicative regulation. Regulating chemical handling twice does nothing to protect water quality. It increases the likelihood of confusion among those who are regulated by maintaining adding unnecessary bulk to a permit that should be succinct, which in turn provides clear guidance to Permittees.

Ecology Response:

40 CFR § 122.42(e)(1)(v) requires chemicals and other contaminants (e.g. veterinary products) handled on-site are not disposed of in any manure, litter, process wastewater, or stormwater storage or treatment system unless specifically designed to treat such chemicals and contaminants. Ecology addresses this requirement by specifying where the Permittee must look for chemical disposal instructions. This condition does not create any new or different regulations.

S4.G. Livestock Mortality Management

Commenters:

• N3 Consulting • Natural Resource Conservation Services	• RE Sources for Sustainable Communities	• Washington State Department of Fish and Wildlife Region 3
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Range of Comments:

1. To better describe what needs to be done, we recommend that you replace "mortalities" with "animal corpses" or "livestock corpses" where pertinent.

Ecology Response:

Ecology used the term “mortality” to maintain consistency because this is the term EPA used to describe dead animals/livestock in 40 CFR § 122.42(e)(1)(ii).

2. A detailed description of what constitutes natural decomposition would significantly enhance this section of the permit.

Ecology Response:

Ecology has added language to clarify that natural decomposition is leaving a livestock corpse on the ground surface and allowing it to decompose in place where it was found, or where the livestock corpse was moved to.

3. If this section remains as is, it will be contrary to Whatcom County Code. We do not support the changes that were made to this section. Whatcom County code does not allow burial of dead livestock in seasonally flooded low areas or 100-year mapped flood plains (Local Health Jurisdiction has the lead under Chapter 246-203 WAC).

Ecology Response:

The requirements set in this section are the minimums with which Permittees must comply. Mortalities must be handled in such a way that they do not pose a threat to surface or groundwater quality, and in a manner consistent with local ordinances. Local ordinances may place extra restrictions on a Permittee’s activities beyond what a permit requires. Even though burial is allowed in the Permit, in this instance (describing Whatcom County Code) the local ordinance would prevent the Permittee from using burial as a livestock mortality disposal option.

4. Please re-insert this language: Carcasses may be rendered only by a rendering plant licensed under chapter 16.68 RCW (Directly from WAC 16-25-025).

Ecology Response:

Ecology included language in the permits related to preventing water quality impacts such as storing livestock corpses in a location that does not allow run-off. If a Permittee decides to use a rendering service to handle livestock corpses, nothing in the permit prevents them from doing so. Because rendering takes place off-site from the CAFO, it does not have water quality impacts applicable to the CAFO. The permit only directs how livestock mortalities must be handled on-site to prevent water quality impacts.

5. Please re-insert this language: Natural decomposition may be used if the carcass is 1,320 feet or more from any groundwater well, spring, sinkhole, or body of surface water, including wetlands, such as a river, stream, lake, pond, or intermittent stream; and not located in an area that has a seasonally high water table, seasonal flooding, or within a hundred-year floodplain.

Ecology Response:

Special condition S4.G.3 already states this. One-quarter mile is 1,320 feet. Ecology has added language to indicate equivalency with one-quarter mile.

S4.H. Manure, Litter, and Process Wastewater Sampling and Nutrient Analysis

Commenters:

<ul style="list-style-type: none"> • Abdirahman Mohamed • Amelia Marchand • Barbara Gustafson • Baumgardner Dairy • Carol Follett • Hank Kastner • Harold Wershow • Jason Darling • King County Department of Natural Resources and Parks • Krainick Dairy, LLC 	<ul style="list-style-type: none"> • Mike Gross • N3 Consulting • Natural Resource Conservation Service • Paradise Jerseys • RE Sources for Sustainable Communities • Rod Vande Hoef • Soiltest Farm Consultants, Inc • Sophia Ressler 	<ul style="list-style-type: none"> • Washington Environmental Council • Washington Farm Bureau • Washington State Dairy Federation • Washington State Department of Agriculture • Wesen Organic Dairy • Whatcom Conservation District
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Range of Comments:

1. Reduced sampling

- Clarification is needed to better define what constitutes 5% variation. The specific nutrient(s) that falls under this section ought to be stipulated and the pertinent units need to be defined or referenced.
- Five percent seems arbitrary and, combined with “any changes” language in last paragraph, is unattainable. 10% variation is better. But why not tie sampling frequency to fall “report card” test results? If a farm has not more than 10% of fields above low and medium levels, source testing could be reduced to every other year.
- Special Condition S4.H.2. 5% variation can occur day to day when making applications. 10% is the absolute minimum variability we can expect. Bear in mind that we are supplying nutrients into a biological system with the ability to swing at over 50% in terms of nutrient requirements. And bear in mind also that the most important applications from a ground water perspective are the final applications of the growing season whereas the most important from an agronomic perspective are the early season applications.
- The permit does not state that samples can be collected every three years, just that sampling can be reduced if there is consistency for three years. This would be annually, or staggered seasonal sampling for instance. Having one sample every three years is far too few in a very dynamic system with uncontrolled variables such as weather.
- Most dairies have a large range of nutrient sources, and many are so variable in consistency and such a small proportion of the nutrient load that specific samples are often costly and imprecise. There is good standard data to use for these in PNW53, the document you reference in Special Condition S5.B. Ecology should consider instead requiring the Permittee to sample all significant sources of nutrients where a significant source is over 2, 3, or 5% of the total nutrient load.

Ecology Response:

Literature indicates that manure concentrations vary widely based on many different factors. This means that manure sampling at the same time each year cannot be considered a reliable indicator of nutrient content. Therefore, Ecology removed the reduced sampling allowance from the permits.

2. Sampling timeframes

- The sampling and reporting dates create a poor process. If a nutrient budget must be submitted by March 1 (as per S7.D), then nutrient tests will need to be taken by January or early February to use for budgeting which creates problems with taking the samples as well as how representative the samples will be.
- This is impractical. Based on the timeline for reporting and requirement for samples to fulfill reporting, a permittee would have to conduct sampling in January to account for the delay in analysis and the time it takes to create the report and submit by the March 1 reporting deadline.
- This guidance has two huge flaws that must be corrected or else nutrient budgets will be incorrect and likely encourage over application: 1) The guidance is requiring a single manure sample to create the annual budget, and 2) the sample is required to be taken prior to submission of the yearly nutrient budget on March 1. This means that sampling would need to be conducted in January/February to account for the time needed to take the sample, wait for the lab analysis, and use it to create the budget report to meet the March 1 deadline. This is an issue because the concentration of manure nutrients varies greatly throughout the year in Western WA due to dilution by rainfall. That means that the entire annual budget will be incorrect because it is based on one value that will likely over budget application rates based on this guideline. Because of the known variability of liquid manure concentration by volume throughout the year in Western WA, it is recommended (per the NRCS Nutrient Management (590) Standard and WSDA Dairy Nutrient Management Plan) that manure be sampled just prior to each application or at least three times throughout the year (spring, summer, fall) if multiple applications are made. Additionally, it is recommended that these samples be used to create the next year's annual field nutrient budget as long as no significant changes have occurred in management.
- To get the most accurate sample, the liquid source needs to be agitated and sampled at the time of application.
- Estimates can be made based on previous years/decades of experience that will direct applications and allow land application to start before tests are taken in the clear knowledge that early applications are only a small part of the nutrient management program in a given field for the year. This allows weather windows to be targeted in the spring without hindrance.

Ecology Response:

Permit compliance is not based on experience, it is based on record keeping and data. Data is also an opportunity to demonstrate the effectiveness of management practices.

Ecology has moved the yearly nutrient budget submittal requirement from March 1 to December 31 so that they are included in the annual report.

Ecology has changed the nutrient budgeting requirements to requiring the Permittee to have sampled the soils, received a soil nutrient analysis, and developed yearly nutrient budgets prior to beginning land application for the season.

See also response to special condition S4.I comment 1.

3. Manure nutrient concentration variation throughout the year
- Please add clarifying language to this section that requires sampling of all sources of manure, litter, and process water that will be land applied prior to beginning any land application. In order for an accurate nutrient load accounting to take place, this needs to be required for all fields where the material is to be used, not just fields that are controlled by the Permittee.
 - Rapid test tools estimate manure concentrations can be useful to us in many circumstances but they will not work for all and they do not give us the full range of parameters you require in S5B.
 - Is spring the only required manure sampling event? Once per year in the “spring”? What about the rest of the year, as applicable? Manure nutrient concentration by volume can vary greatly throughout the year and needs to be accounted for prior to each manure application event. We recommend at least three samples throughout the year. Those samples can be used to budget for the next year pending no significant changes in management.
 - The concentration of manure nutrients varies greatly throughout the year due to dilution by rainfall. Sampling early in the year (e.g. January) to meet reporting deadlines will not be representative of the entire year. A sample in January can be half that of a sample in June due to the water dilution of nutrient concentration by volume. That means that the entire annual budget will be incorrect and likely over budgeted based on this guideline. That would put them in violation of the permit requirements.
 - There is variation annually based on precipitation that will influence the nutrient concentration by volume that cannot be easily predicted. Annual sampling throughout the application season is recommended. For annual crops, a single sample just prior to manure application is best. For forage or split sampling, it is recommended to sample prior to each manure application, or three spaced throughout the year (i.e., February, June, September) to be representative.
 - Requiring nutrient budgets be based on spring sampling could result in an over-application of nutrients, particularly in high winter precipitation areas of the state. There is a considerable amount of water that is collected in the non-application season; this results in lower concentrations of nutrients in the effluent. During the application season, less water is collected in storage; this results in high concentrations of nutrients later in the application season. Ecology should consider developing, or having the permittee provide, a sampling and analysis strategy that will account for the differences. This might include a set of two tests annually, one in the spring and one in the fall, upon which the producer may choose the most appropriate test to build a nutrient budget.
 - Ecology should consider using samples obtained throughout the previous year (as long as no significant changes have occurred in management) for nutrient budgeting. This spring sample will not be representative of the annual flux, and will likely not be an accurate estimate.
 - Basing nutrient budgets on spring manure samples is not recommended. Not only does manure concentration vary throughout the year, but also year-to-year based on annual rainfall patterns. There is a natural variation in annual precipitation that will influence the nutrient concentration by volume and which cannot be easily predicted.
 - Annual sampling of manure throughout the application season is recommended. For annual crops, a single sample just prior to manure application is best. For forage or split

sampling, it is recommended to sample prior to each manure application, or three spaced throughout the year (i.e., February, June, September) to be representative. If no changes in management have occurred. The previous years samples can be used for next years budget, but actual application rates should be adjusted in real-time as samples are collected and total nitrogen rates determined. As written, the permit requirements will likely cause incorrect, non-agronomic application rates and violate the permit.

Ecology Response:

A yearly field nutrient budget is the maximum amount of nutrients (from all sources) that may be applied to a field. It is based on the nutrient concentration in field soils (and other parameters). The rates (e.g. x gallons per acre) at which manure, litter, or process wastewater are land applied to a field are based on the concentration of nutrients in the manure, litter, process wastewater, or other organic by-products. Since nutrient budgets are not based on manure, litter, process wastewater, or other organic by-products nutrient concentrations, the requirement to include this information on the nutrient budget has been removed.

The comments bring up the point that the nutrient concentrations in manure, litter, process wastewater, or other organic by-products will change over time due to environmental conditions (e.g. rainfall dilution, or concentration due to evaporation and lack of rainfall). The draft permits only required a single sample analysis for manure, litter, process wastewater, or other organic by-products in the spring. Because of the changes in concentration, Ecology has changed this requirement to require three manure, litter, process wastewater, or other organic by-products sample analysis of manure, litter, and process wastewater sources spaced throughout the application season to account for variations in nutrient concentration.

The order of paragraphs was changed for easier reading flow with the second paragraph being moved before the first paragraph.

4. Comparison to Dairy Nutrient Management Program and NRCS 590

- It is possible that this guidance presented for manure was confused with the current soil sampling guidance located in the DNMP or the NRCS Nutrient Management (590) Standard (2014). In the DNMP it states that a farm needs to have an annual fall soil sample, but that sample only needs to have a full panel comprehensive analysis every three years while all other years the sample is analyzed for are nitrate only. In this case they still need to have an annual sample, it is the analysis that differs. The NRCS Nutrient Management (590) Standard (2014) states that: *“Manure, organic by-products, and biosolids samples must be collected and analyzed at least annually, or more frequently if needed to account for operational changes (feed management, animal type, manure handling strategy, etc.) impacting manure nutrient concentrations. If no operational changes occur, less frequent manure testing is allowable where operations can document a stable level of nutrient concentrations for the preceding three consecutive years, unless federal, State, or local regulations require more frequent testing.”* (NRCS Nutrient Management (590) Standard (2014), p. 2)
- Permit requirements will require different manure sampling strategies than dairies currently meet under WAC 16-611-020:

	RCW 90.64 through WAC 16-611-020	Draft CAFO permit S4.H
Organic N	Annually, Each organic source	Annually, Each organic source, spring
Ammonia/Ammonium	Annually, Each organic source	Annually, Each organic source, spring
Nitrate	No	Annually, Each organic source, spring
Phosphorus	Annually, Each organic source	Annually, Each organic source, spring

Ecology Response:

Comments noted. Due to permits requiring tighter control of manure and land application, some differences between the permit requirements and the requirements of chapter 90.64 RCW are to be expected. However, where possible, Ecology has required soil and manure sampling and analysis similar to the requirements of chapter 90.64 RCW.

S4.I. Soil Sampling and Nutrient Analysis

Commenters:

<ul style="list-style-type: none"> • Abdirahman Mohamed • Amelia Marchand • Barbara Gustafson • Baumgardner Dairy • Benjert Farms • Carol Follett • Hank Kastner • Harold Wershow • Jason Darling • Jim Dyjak • King Conservation District • King County Department of Natural Resources and Parks • Krainick Dairy, LLC 	<ul style="list-style-type: none"> • Lagerway Dairy • Mike Gross • N3 Consulting • Natural Resource Conservation Service • Paradise Jerseys • RE Sources for Sustainable Communities • Rod Vande Hoef • Soiltest Farm Consultants, Inc • Sophia Ressler • Vreugdenhil Farms • Washington Environmental Council 	<ul style="list-style-type: none"> • Washington Farm Bureau • Washington State Dairy Federation • Washington State Department of Agriculture • Washington State Department of Fish and Wildlife Region 3 • Washington State University - Puyallup Extension, WSU Extension Puyallup • Wesen Organic Dairy • Whatcom Conservation District
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Range of Comments:

1. Spring soil sampling

- Spring tests every year are largely duplicative of information from the fall tests and do not gain informative value from more frequency. We suggest spring tests on all fields at least every three years.
- Spring and fall soil nitrate ranges have different marks as they have different objectives, therefore, nitrate ranges for spring sampling should also be provided such as has been done in this permit for fall soil nitrate ranges.
- Jayasundara et al. (2010) caution that to completely assess the risk of nitrate leaching to groundwater, measuring fall soil nitrate concentration is inadequate; therefore spring sampling is needed and needs to stay in this permit. Fall soil nitrate tests provide feedback on the effectiveness of the manure management practices from the previous season while spring tests should provide indication of the appropriate application rates of manure at the beginning of the growing season.
- The only parameter which changes greatly from spring to fall is Nitrate.

- In many cases manure is applied agronomically in February and in some, January, taking advantage of weather windows that open up as soils dry out to apply much needed nutrients to overwintered grass as they come out of spring. Sampling soils in a timely manner in the early spring is fraught with problems especially if the lab result must be used for determining applications: Sample too early and the sample is so wet that the drying process at the lab renders the sample worthless; Sample too late and you compromise application timing and therefore crop yield.
- This requires an additional set of complete soils samples to be taken and analyzed annually, which will greatly increase sampling costs for many farms. Currently, this sample only needs to be conducted every three years. Please include language, similar to the manure sampling, that consistency will allow a decrease in sampling.
- This is an added cost, which for the 94% of our state fields that are within the current standards is entirely unnecessary and therefore a burden. Suggested change: Make spring soil sample on the west side of the State only necessary in response to excessive nitrogen levels in the previous fall.
- It is recommended that soil sampling be limited to the fall only for grass/forage fields, no spring test, and that nitrate is analyzed every year and a comprehensive test every three years as outlined by WSDA and WAC 16-611.
- An additional spring soil test can be added for corn fields only follow the guidance below. Only the fall test from all crops/fields should be used to help create the next yearly nutrient budget. In this case, the fall test should be used as a gauge to provide feedback on how well the budget was created the following year and how it should be modified for the coming year.
- For corn, a spring soil test is recommended to assess how much manure/fertilizer should be applied. However, that test is not typically taken until May, and therefore cannot be used to create the yearly field nutrient budget that is due March 1. Instead it is used for real-time nutrient management and agronomic calculations.
- Soil nitrate value in the January/February period at 0-12 inch composite, are very low, typically less than 10 ppm. Conversely, nitrate levels in the summer during peak plant uptake are 3-6 times higher. If annual budgets are based off of spring soil samples, recommended application rates would be in extreme excess of agronomic rate.
- Additionally, it should be noted that other required soil sample parameters, such as phosphorous, do not have much seasonal variability.
- In western WA (a high precipitation area), soil sampling on CAFOs is generally done in the fall, in order to measure residual nutrients. By spring, winter rains have often either leached or denitrified any extra nutrients, so that spring soil tests results are inconclusive and therefore not effective for nutrient management. Recommend a fall soil sampling be required for the >25 in precipitation category.
- In Western Washington there is little value to having a spring soil test for nitrate-nitrogen as it has been washed out of the root zone due to rainfall over the winter – see DOE Publication No. 14-03-001 March 2014 – Nitrogen Dynamics at a Manured Grass Field Overlying the Sumas-Blaine Aquifer in Whatcom County, and Saunders et al. 2012. International Journal of Agronomy. Volume 2012, Article ID 101074, 10 pages, doi:10.1155/2012/101074. Comparison of Raw Dairy Manure Slurry and Anaerobically Digested Slurry as N Sources for Grass Forage Production.

- Spring soil samples on the west side of the state have consistently shown there to be only very low levels of Nitrate and ammonia in the soil prior to nutrient application in the spring regardless of levels in the fall. Leaching, denitrification and overwinter uptake by cover crops account for this difference but regardless of the situation I rarely see a field with over 40lbs per acre of nitrogen (NO₃ and NH₄) in April which is easily incorporated into nutrient budgets.
- The requirement for a spring soil test in Western WA adds a significant cost to farms while bringing little added value to the agronomic process. The current guidance states that a 12 inch fall post-harvest soil sample is the only required soil sample and that it be analyzed for nitrate annually and every three years a comprehensive soil analysis (i.e., add P, K, OM, etc.) is added. This is a more appropriate and meaningful method as it gives producers a way to check their application performance for the year and adjust for the next year as needed.
- To meet this condition, soils samples must be taken before March 1, mostly likely in January to account for delays in lab analysis and integration into the report for timely submission. This is not practical for a large percentage of fields in Western Washington that are saturated and should not have any activity on them.
- What is most noteworthy is both the extreme variability and the complete lack of a strong annual trend in nitrate concentrations. This further highlights the lack of need for a spring test in Western WA as it provides no significantly different information from the fall soil test.
- This information will not be helpful as the N nutrient content will be near zero due to seasonal rainout.

Ecology Response:

Ecology is retaining the requirement to obtain spring soil samples from land application fields to use as the basis for yearly nutrient budgets.

Spring soil sampling provides different information than fall soil sampling. Fall sampling is a report card of past season's management. Spring sampling provides necessary information on residual soil nitrate. This measurement allows for accurate manure application. Comments also state that spring sampling is not necessary because whatever nitrate is in the soils in the fall (and is mineralized over the winter) will be leached out (or used by a winter cover crop) by spring due to rainfall in western Washington. These statements argue for tighter tracking, nutrient budgeting, and adaptive management benchmarks in western Washington to minimize this over-winter leaching to groundwater by minimizing fall soil nitrate concentrations to protect groundwater quality. Even in colder winter weather, mineralization occurs, but at a reduced rate. Since mineralization occurs year-round, there will be plant available nitrate in the spring that needs to be accounted for in a nutrient budget.

Sanchez-Perez et al., (2003) illustrates the large variability that occurs in soil nitrate concentrations from crop harvest to spring fertilizer application. Additionally leaching to groundwater can remove nitrate and mineralization of organic nitrogen can add nitrate to the soils. An accurate accounting before nutrient application will assure that only the amount of nutrients are being applied at the time that the crop can use them. This assists with the goal of manure management in a land treatment system. Jayasundara et al. (2010) recommends spring soil sampling.

Other types of facilities which discharge to groundwater or use land treatment (industrial, municipal, etc.) are required to demonstrate compliance with water quality standards. This can be done with groundwater monitoring or it can be achieved with spring and fall soil monitoring in conjunction with adaptive management.

The following researchers found that mineralization occurs year round (See Manure and Groundwater Literature Review): Watts et al. (2007), Lamb (2012), Kowalenko et al. (2007), Clark et al. (2009). Cookson et al. (2002), Kuipers et al. (2014), Dessureault-Rompere et al. (2010).

Ecology has changed the spring soil sampling requirements to only require sample analysis for ammonia and nitrate. Fall soil samples will provide phosphorus and organic matter analysis. This is because phosphorus and organic matter soil levels are not expected to change between fall and spring through leaching and mineralization like ammonia and nitrate will.

See also response to special conditions S4.H comment 2

2. Fields and Management Units

- Please add clarifying language on what a unique field is. While each field has a unique field ID, there should be clarity for purposes of manure application to ensure that each "unique" field has the same uniform characteristics.
- Ecology should consider changing “The permittee must take soil samples of all land application fields” to align with concept of management unit as described in PNW570 – October 2003.
- Will this requirement allow for nutrient management by crop management units or is an analysis required for each individual field?
- Ecology should consider defining fields as “crop management units” where soil type, application rates, irrigation rates, and cropping are all the same.

Ecology Response:

Ecology intended that the term “land application field” would encompass management units in the permits. Ecology has modified the definition of land application field to clarify.

A unique field identifier is the name or number designation of a land application field/management unit that will be used to reference the same field on all documents and reports required by the permit.

3. Timing of soil sampling within cropping

- A significant portion of the east side crop ground rotates two crops per year and there is very little time when a given field can be considered uncropped. Increasingly the gap between harvest and planting is measured in hours rather than days. As such the spring soil test can be used to help plan out applications for the season but only in the knowledge that it is under a growing crop which has had fertility needs all through the spring.

- On the west side of the state a large and increasing proportion of the corn is grown with a winter cover crop already present under it, sown in June or July as the crop is cultivated.

Ecology Response:

Knowing soil nutrient values is essential for developing nutrient budgets that reflect actual field conditions and are protective of groundwater versus assuming what field nutrient conditions are, even when planting a second crop.

See also responses to special condition S4.I comment 1 and S4.H comment 2

4. Fall soil sampling

- Permit requirements will require different soil sampling strategies than dairies currently meet under WAC 16-611.020

	RCW 90.64 through WAC 16-611.020	Draft CAFO permit S4.I
Postharvest soil nitrate	Annually fall	Annually fall & spring
Ammonia/Ammonium	Every 3 years	Annually fall & spring
Organic Matter	Every 3 years	
Organic N	Every 3 years	Annually fall & spring
Phosphorus	Every 3 years* ¹	Annually fall & spring
Potassium	Every 3 years	
pH	Every 3 years	
Electrical conductivity	Every 3 years	

- Ecology should consider providing guidance as to when the fall soil tests be taken. DNMP recognizes that this is often a moving target “after the growing season and before substantial rainfall”. It may be helpful to supply a deadline to prevent the approach of testing later in the fall to get lower overall nitrate values.
- For Western WA, fall harvest for corn can be September-October, and late October for grass. In this case “fall after harvest” works for corn, but for grass, the sample would likely occur after a significant amount of rain in a typical year and provide inaccurate values. Additionally, “winter precipitation” would not technically start until winter in December, which is far too late to collect a fall sample.
- It is better to collect samples prior to fall precipitation (September-November). The proper guidance for fall soil sampling in Western WA should be: Because the timing of fall rainfall is unpredictable, the best strategy is to sample fields before October 1 whenever possible. Collect samples from medium- to fine- textured soils (loams, clay loams, and clays) prior to 5 inches of cumulative fall rainfall. Sandy soils (sand, loamy sand, or sandy loam soil texture) should be sampled prior to 3 inches of cumulative fall rainfall. The starting date for calculating cumulative fall rainfall is September 1. Include inches of irrigation water applied after September 1 in your estimate of cumulative rainfall.
- Special condition S4.I.2. This is current and acceptable guidance, but needs some clarification or method reference. Typically, only a fall nitrate test is conducted annually and a comprehensive test every three years according to the WSDA rather than the annual comprehensive testing suggested in S7.C.
- There is already a state requirement on dairy farms to sample their fields in the fall, this gives us good information over a wide level of parameters which we can use the following spring.

Ecology Response:

Phosphorus and organic matter are not expected to change significantly from year to year either through cropping or leaching due to precipitation while nitrate and ammonia are more variable. Ecology has modified the permit requirements for soil sample analysis. Nitrate and ammonia sample analysis will still be required every year. However soil samples will only need to be analyzed for phosphorus and organic matter once every three years. This aligns with the phosphorus and organic matter soil sample analysis being done under the WSDA program.

Ammonium and nitrate are important to measure because in the fall they give a complete picture of what was utilized by the crop, and in the spring they indicate what is available so nutrient budgets can accurately determine manure application rates. Organic matter provides a guide to long term potential nitrogen contribution but is not a good indicator of what is currently available for crop use.

Ecology has changed what sample analysis are required to be taken in the spring versus in the fall. See response to special condition S4.I comment 1.

Ecology has also changed the language to clarify when fall soil samples are required to be taken. Samples must be taken after harvest of annual crops and by October 1st but before heavy rains begin in fall. The timing of the fall soil sampling is meant to be after harvest (for annual crops), but before precipitation begins to leach nitrate out of the soil profile which would decrease the reported nitrate and affect what adaptive management is required of the Permittee. In order to account for leaching in those circumstances where a Permittee does not sample their land application field soils by October 1, the permits require that the Permittee take a soil sample one foot deeper than the basic soil sampling requires.

S4.J. Land Application

NOTE: This section of the permit has been reorganized to reduce duplicative language and simplify the layout of requirements. Each section below contains a note which indicates the corresponding new section in the final permit.

Commenters:

<ul style="list-style-type: none"> • Abdirahman Mohamed • Amelia Marchand • American Farmland Trust • Art & Theresa Mensonides • B7 Engineering • Barbara Gustafson • Baumgardner Dairy • Bel-Lyn Farms • Benjert Farms • Bill • Bovine Drive, Inc • Carol Follett • Center for Environmental Law and Policy 	<ul style="list-style-type: none"> • Kathryn Vestal • Kelley Callahan • Kirsten Fitterer • Krainick Dairy, LLC • Lagerway Dairy • Larry Stap • Larson Dairy • Leah Boehm • Lee Bode • Lensen Dairy • Lummi Indian Business Council • Lynne Pendleton • Lynne Shamay 	<ul style="list-style-type: none"> • Ronna Loerch • Ross Marquardt • Sandy Robson • Sidney, Cornelius, & Aaron DeBoer • Sierra Club • Siobhan Ring • Sophia Ressler • South Yakima Conservation District • Spring Canyon Ranch, LLC • Stephanie Smith • Susan Johnson • Turner & Co.
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<ul style="list-style-type: none"> • Citizens for a Health Bay • CROPP Cooperative, Organic Valley, Organic Prairie • Dena Jensen • Dr. Paul Lindholdt • Dr. Washington State University - Puyallup Extension, WSU Extension Puyallup • Environmental Engineering Associates • F.A. Farm • Form email with Subject Line: Please support stronger CAFO rules • Friends of Toppenish Creek • Gary Davis • Harlan Kredit • Harold Wershow • Jason Darling • Jason Sheehan • Jim Dyjak • Julienne Loveall 	<ul style="list-style-type: none"> • Markus Rollinger • Marlene White • Martin Kimeldorf • Marvin Hoekema • Mary Baechler • Mensonides Dairy, LLC • Mike Gross • N3 Consulting • Natural Resource Conservation Service • Northwest Indian Fisheries Commission • Pam Borso • Paradise Jerseys • Patty Martin • Pomeroy Dairy, LLC • Raven's Eye Consulting • RE Sources for Sustainable Communities • Rebecca Canright • Rev. Ken Jones • Rich & Ann Appel • Rod Vande Hoef 	<ul style="list-style-type: none"> • Twila Slind • Washington Cattlemen's Association • Washington Environmental Council • Washington Farm Bureau • Washington State Dairy Federation • Washington State Department of Agriculture • Washington State Department of Fish and Wildlife Region 3 • Wesen Organic Dairy • Western Environmental Law Center • Whatcom Conservation District • Yakima Valley Dairy Federation
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Range of Comments:

1. Nutrient budget limits and enforceability

- The permit should place binding site-specific limits on the land application of phosphorus and nitrogen.
- The permit should include nitrogen and phosphorus limits on land application as is required by 40 CFR § 122.42(e).
- Clear, enforceable language must establish consequences in the event that an operation continues to apply even with high groundwater nitrogen levels.
- The manure pollution prevention plan, nutrient budget, and associated forms do not meet the minimum requirements for nutrient management plans. For example, the permit does not:
 - Identify land application fields;
 - Establish field---specific rates of application properly developed, as specified in paragraphs (e)(5)(i) through (ii) of the rule, to ensure appropriate agricultural utilization;
 - Set timing limitations concerning land application on the fields available for land application;
 - Establish field---specific land application rates for nitrogen and phosphorus based on the Linear Approach or the Narrative Approach, both of which must be based on the outcome of the field---specific assessment of the potential for nitrogen and phosphorus transport and crop needs, as well as other key factors; or
 - Identify appropriate site---specific conservation practices to be implemented.
- These conditions, taken as a whole, are so arbitrary and prescriptive as to make it more not less difficult for us to protect ground and surface water.

- Ecology should remove nutrient budgets from the permit requirements. They are already broadly implemented and covered by RCW 90.64 who require a more detailed look only where they suspect inappropriate applications. Requiring them of every dairy suggests that you suspect the entire dairy community of inappropriate applications.
- Atmospheric deposition of reactive nitrogen is not addressed

Ecology Response:

Nutrient budgets are required as part of the federal CAFO rules so they are included in the combined permit. Since the state only permit covers the exact same activities and is meant to protect water quality in the same ways, the same nutrient budgets are required as part of the state only permit. In addition, nutrient budgets are documentation of practices that the Permittee is complying with permit requirements, which is how Ecology regulates other permitted discharges.

The permits are specifying how nutrient budgets must be calculated (e.g. the narrative approach in the nutrient management planning requirements for the federal CAFO rules) which results in a nutrient budget that is an enforceable limit for the Permittee.

See also response to special condition S1.A comment 3.

2. Nutrient budgeting

- Ecology's Manure and Groundwater Quality Literature Review (2016) states that researchers agree that all sources of nitrogen need to be considered in the total load and residual soil nitrogen and on-going mineralization of organic nitrogen are often overlooked sources that lead to nitrogen leaching and impacts to groundwater. These sources of nitrogen should be included in the nutrient budgets required by the permit to ensure best nutrient load estimates that are protective of groundwater quality.
- Some farms have never had a high fall nitrate test, why are you requiring them to lodge nutrient budgets with you? Because they have a lagoon that may leak?
- The permit implies that we are at a starting point, that we can take soil samples in the spring and they will determine what we do during the year and that the fall tests will establish the validity of our nutrient applications. Whilst this may be great agronomy theory, the realities are far different: a huge number of environmental and management factors come into play during the year.
- The use of crop nutrient budgets is undoubtedly a good agronomy planning practice, however, it is a ludicrous overbearing bureaucracy to require these to be logged with the department of Ecology and made public when barely five percent of the fields associated with dairies have a nitrate surfeit problem (according to the WSDA inspectors and our own soil test data). These budgets are a planning aid and variance from them should not need to be explained away in the public forum.
- Many dairies have ignored the guidelines repeatedly over the past decades when they have applied manures to croplands in amounts that exceed agronomic rates.

Ecology Response:

The requirement to obtain a permit coverage is not based on whether or not a producer has had a high nutrient test on one of their land application fields. It is based on whether or not the facility has or had a discharge to waters of the state. When a permit is written, Ecology looks at facilities and the industry to determine the sources of discharges from the category

of facilities covered by a general permit. In writing the permit, Ecology then addresses those sources of discharge through permit conditions for the protection of water quality. So a facility may be covered under a permit for one reason (e.g. lagoon discharge to groundwater), but have other sources of discharge (e.g. discharge to groundwater from land application fields) that must also be accounted for. In the permits, nutrient budgeting is the way groundwater discharges from land application fields are minimized to protect groundwater quality.

Nutrient budgets and the land applications they guide are subject to the various environmental forces that are beyond the Permittee's control. This is partly the reason that fall soil sample analysis results are benchmarks and not permit limits. This avoids penalizing Permittee's for variables beyond their control while still including enforceable permit conditions, which show what the Permittee was planning, how those plans worked, and what will be done in the future. Nutrient budgets are the only available tool that allows this flexibility in the permits. The alternative is to attempt to set numerical limits that are inflexible.

Using nutrient budgets as a narrative effluent limitation requires that the parameters necessary to create a nutrient budget must be identified and captured as permit requirements.

There are 6 primary sources of nitrogen: 1) manure, 2) inorganic fertilizer, 3) mineralization of soil organic matter, 4) crop residue, 5) irrigation water, and 6) precipitation. The nutrient budget accounts for manure, litter, process wastewater, chemical fertilizers, and other sources which would be irrigation water, aerial deposition, and precipitation.

Variance in budgets due to environmental variables outside of the control of the facility, such as aerial deposition and precipitation, is one of the reasons Ecology is not setting soil nutrient concentrations as limits and using benchmarks instead to trigger adaptive management. This avoids penalizing Permittees for factors beyond their control.

Compliance data is required by all permits Ecology issues and is a standard permitting practice. This data is publically available. Nutrient budgets show that Permittees are land applying according to a reasonable nutrient budget and how much environmental variables can affect such budgets.

See also special condition S4.H comment 2 and Comments on the Draft CAFO permit comment 3.

3. Application timing

- Allow for greater discretion for the time of application.
- Provide seasonal application windows.
- BMPs should determine field applications.
- Allow for use of manure as fertilizer when applied using Best Management Practices to prevent surface water discharge.
- Restrictions of field applications condemn pastoral farming practices.

- Removal of ability to apply manure on fields will result in increased application of commercial synthetic fertilizers.
- Taken together, all these prescriptions will likely mean farmers will have to add significant additional storage capacity. All of these conditions were added by Ecology and are well beyond previous permit, current EPA draft, or Idaho permit language.
- Additionally, we have concerns about these conditions when viewed as a whole. When restrictions on manure applications after October 1 are added to restrictions on applications until “spring green up,” and are added to restrictions on applications to “setback areas,” and are added to restrictions on applications to bare soil unless within 30 days of planting, and are added to restrictions on application to >90% saturated soils, very few application options remain.
- These restrictions will result in poorly timed applications for plant growth needs, resulting in poor crop production. Nitrogen mineralization takes time.
- These restrictions will result in compressing spring application season into a few weeks. If weather patterns such as La Niña of 2011 and 2012 repeat (as is predicted for spring of 2017), these conditions mean storage systems will exceed design capacity, and/or applications will be subject to the missing “emergency” clause, or applications will not occur until June or July after the first cutting or planted crop needs it. Mistimed applications will result in poor nitrogen utilization and actually result in worse fall soil tests and higher risk to groundwater. Compressing a spreading season to only a few weeks also gives us concern about surface water. Unforeseen and unpredicted weather events during those few weeks could increase risk to our efforts to protect water quality for the shellfish farmers downstream.
- Ecology should consider this simple framework:
 - No application during freezing weather or on frozen soils.
 - No application on fields without a crop from December 1 until 2 weeks prior to spring planting date.
 - Applications between December 1 and February 15 may be made if agronomically justified and there is a growing (winter) crop in the field so long as the field has an appropriate and effective perimeter berm.
 - Manure land application requirements need to require restrictions on the timing of animal waste application.
- As currently written, only the form of manure being applied, the nutrient needs of the crop at the time the application occurs, and the environmental conditions (e.g. precipitation) are accounted for. These three factors fall short of a true nutrient management loading equation and therefore cannot accurately indicate what the true application of nitrogen should be nor prevent discharges without any certainty. As outlined in Ecology's Manure and Groundwater Quality Literature Review (2016), the following are cited to affect application rates of manure: all sources of nitrogen (which are currently not accounted for as this permit is written), types of nutrients applied (not just type of manure), the timing of the application, type of crop grown, type of soil (also important to include), and climate (which encompasses more than just precipitation).

Ecology Response:

Ecology has clarified the language in special condition S4.J.3.d.vii to refer to T-SUM 200 as the date that land application may start occurring provided that other permit conditions are complied with (e.g. spring soil samples, nutrient budgets, etc).

Ecology has modified the language in special condition S4.J.8 to clarify that this requirement applies to double-cropping and winter cover crops and to streamline the language for better clarity. See also response to special condition S4.J.8 comments.

Ecology is not requiring adding lagoon capacity as part of the permits. See also response to special condition S4.J.9 comments.

Ecology has modified the nutrient budget requirements of special condition S4.J.1. There are 6 primary sources of nitrogen: 1) manure, 2) inorganic fertilizer, 3) mineralization of soil organic matter, 4) crop residue, 5) irrigation water, and 6) precipitation/atmospheric deposition. Ecology considered, but decided not to add atmospheric/precipitation deposition to the yearly nutrient budget. Hem, 1985 indicate that for precipitation (which includes atmospheric deposition) the rate of deposition is about 0.24mg N/L. This is approximately slightly more than 0.5lbs N per acre for every foot of precipitation. This is a small amount of nitrogen which will likely be absorbed by the background noise of any soil sample analysis. However in the instance where a Permittee has a high or very high risk level for adaptive management (Special Condition S4.K), the Permittee may want to consider determining actual deposition rates for their field to determine if deposition is actually affecting the field nutrient levels.

4. Application timing based on calendar dates
 - While I understand the desire of ECY to encourage producers to use the best tools and decision making regarding method, timing, amounts and other important factors relating to organic nutrient applications, this is not a subject that science supports easy to enforce calendar dates.
 - Field location, labor and equipment availability and farm gate crop values all must be considered. Given this complexity, set calendar dates are enormously problematic for the average or long season location producer.
 - Field applications between December 1st and February 15th may be made if agronomically justified and there is a growing winter crop in the field, and the field has an appropriate and effective perimeter berm.

Ecology Response:

Land application timing is not based on calendar dates. Beginning of application season is based on T-SUM 200 and when the Permittee has completed their nutrient budgets for the season. Application season ends when the crop can no longer use nutrients. If double cropping or winter cover crops are used, then a soil nitrate sample must be collected before the crop is planted and evaluated with the nutrient budget to determine if additional manure applications are needed by the crop.

Application outside of the growing season poses a high risk to groundwater. For double cropping or winter cover crops, see response to special condition S4.J.8.

5. Allow for flexible requirements based on case-by-case circumstances of individual operations.

Ecology Response:

While Ecology is setting the performance goals required of Permittees and the guidelines within which Permittees must operate, Permittees have the flexibility of determining how to meet the performance goals on their facility.

6. Ecology is well staffed with experienced, well-educated and trained engineers, hydrologists, hydrogeologists and water quality specialists. However, institutionally, you are far from your element and lack the expertise to full understand and apply a standard here based on your fundamental lack of education, training and practical experience in the area of Agronomy and Soil Science to make this call.

Ecology Response:

Comment noted.

7. I agree a reasonable, science based standard is required to deal with a very small number of hard headed producers who have exercised poor judgement in the past. It would seem best then to go to the safe harbor of NRCS Standards and Specifications for general good science guidance on these issues.

Ecology Response:

Nothing in the permits prevents the use of NRCS practices. Ecology relies heavily on NRCS for many components of the permit including lagoon construction and design standards. However for CAFOs covered by the either permit, implementation of the NRCS practices must comply with permit conditions.

8. Third-party application of manures to croplands is not adequately addressed.

Ecology Response:

There are limits to Ecology's authority that prevent addressing exported manure in the permits. If manure is actually exported and the receiving facility is not permitted, any discharges would have to be handled as either a nonpoint source of discharge or, if the facility responsible for the discharge is determined to be a point source as a discharge requiring the facility to obtain a permit coverage.

See response to special condition S4.O comments.

9. Risk-based monitoring requirements will ensure that resources are focused on operations more likely to impact natural resources and the communities that depend on them.

Ecology Response:

Risk based monitoring is addressed by the adaptive management matrices in special conditions S4.K. The adaptive management matrix addresses operations based on the residual soil nitrate results. In situations with higher risk (e.g. high or very high fall soil nitrate concentrations), additional monitoring, or practices are required.

10. The permit contradicts the recommendations of Ecology scientists and authorizes the winter application of manure.

Ecology Response:

Winter application is not authorized. At most application would be occurring in the late fall unless and emergency situation arises (see special condition S4.J.9). Application of manure,

litter, or process wastewater to double crops or winter cover crops is allowed in compliance with the other permit requirements and if fall soil sampling shows that field soils will not provide adequate nutrients for the double/winter crop. If a double/winter cover crop is planted but permit conditions do not allow land application of manure, litter, or process wastewater, the Permittee should not be land applying.

11. In my experience over 95% of the producers I observe on a weekly basis over the past 40+ years are making appropriate applications. Here the desire is to deal with the few offending producers, without harming the vast majority who are already, and have for some time, complied with good science, Best Management Practices, and continue to make appropriate applications. Farmers need flexibility to respond to the environment, soil factors, crop rotations, double crop systems, weather, irrigation water availability in order to achieve a goal held in common with Ecology; maximize nutrient use efficiency without causing significant environmental harm.

Ecology Response:

While Ecology is setting the performance goals required of Permittees and the guidelines within which Permittees must operate, Permittees have the flexibility of determining how to meet the performance goals on their facility.

See response to General Comments on the Draft CAFO Permits comment 3 for a discussion of what compliance with the Dairy Nutrient Management Act means.

12. Emphasis of permit should focus on land application of manure opposed to manure lagoons as source of ground water contamination.

Ecology Response:

Both lagoons and land application are considered as sources of nitrate if there is a discharge to groundwater. Other than generally requiring proper operation and maintenance of all facility infrastructure including lagoons, the focus of the permit is on land application.

13. It would be helpful if the nutrient budget worksheet was made available along with the permit review to review what the permit requirements entail.

Ecology Response:

The nutrient budget was made available along with all the other draft Permit documents on the CAFO permit website. The web address was:

<http://www.ecy.wa.gov/programs/wq/permits/cafo/docs/2016YearlyFieldNutrientBudget.xlsx>.

14. Comments on S4.J

- For Western Washington, DNMP suggests using the prior years' records to develop subsequent years' nutrient budget for farm and field. This includes use of manure tests (spring and fall test), Pre Side-dress Nitrate Tests, Post-Harvest Soil Nitrate Tests, actual vs. predicted crop yields and crop nutrient values. This offers a more complete picture and provides a useful tool for the producer.
- Spring soil samples are meaningless for nitrogen budgeting in the Western side of the state. Coming out of the winter the soils are devoid of available nitrogen (our tests on many Westside dairy farm soils in the spring have shown that nitrate and ammonium levels combined are consistently lower than 30lbs of N per acre) and testing for it is

expensive, time consuming and irrelevant. That is not to say that we do not account for that small amount in the nitrogen budget, but that to wait for conditions to become dry enough to take soil samples, send them to the lab, receive results back and then calculate and lodge nutrient budgets with you is a process guaranteed to delay initial applications which will have an overwhelmingly detrimental effect on crop yields.

Ecology Response:

Soil nitrate values change over the winter from leaching and mineralization. The spring soil sample provides important current data. The nutrient budgets required as part of the permit must use actual numbers from samples taken for the season in which the crops will be grown. The goal is to have the best information possible so that the producer can make appropriate manure management decisions. Using the previous year's numbers is an estimate of what will happen during the current year and does not account for environmental variability. With a poor or excellent crop one year, there may be more or less nutrients left in the soil at the start of the next season than expected based on the previous year.

Ecology has modified the nutrient budgeting and reporting requirements of the permits to require submittal of nutrient budgets with the annual report at the end of the year (December 31) versus previously nutrient budgets were required to be submitted to Ecology early in the year. See response to special condition S7.D comments.

15. Comments on S4.J.1

- It is possible estimate when nitrogen from manure will become available and estimate the crop needs but it is impossible to apply the exact nutrient needs of a crop at the time of application. Ecology should remove “at the time of application” from the sentence.
- Ecology should clarify or remove the phrase “the nutrient needs of the crop at the time the application will occur”. This phrase is confusing. Fertilizer applications are always prospective. The farmer is supplying nutrients that will be available for the crop need at a point in the future.
- Can “*the nutrient needs of the crop at the time the application will occur*” be determined via book value? Does it need to be based on real tests? This can be very hard to determine as it is dependent on current and future weather conditions, along with other parameters.
- The wording of *The amount of nitrogen from all sources must be no greater than:*” is awkward and should be rewritten to clarify.
- The statement about the amount of nitrogen not being greater than the nutrient budget is confusing. Ecology should clarify, for example “*The amount of nitrogen from all sources must be no greater than what is recommended in the balanced yearly field nutrient budget. The following items must be included on the yearly field nutrient budget for each field.*”
- Ecology should change the “for each field” statement to align with concept of a management unit as described in PNW570 – October 2003 - “Managing soil nutrients using a management unit approach”.
- This is a ridiculous bureaucratic paper exercise for the 94% of fields that are meeting the required fall soil test levels. The reason that only 6% of fields are high is that the farmers are already doing this or have already done this for years, often in their heads or in the field, walking through the crop. A good farmer can tell you how much nitrogen his crop needs just by looking at it.

Ecology Response:

Ecology has updated the language in this permit section to provide clarity and reduce duplication of permit requirements. The language now states that the nutrient budget calculates the maximum amount of nutrients that may be applied to a field.

The definition of land application field includes the use of management units.

Compliance with chapter 90.64 RCW is often stated in comments as a reason for not needing a permit. See response to General Comments on the Draft CAFO Permits comment 3.

16. Comments on S4.J 1.a.

- Ecology should clarify what is meant by “Year the nutrient budget applies to”.

Ecology Response:

This means the current calendar year. Ecology has changed the language to clarify.

17. Comments on S4.J.1.c.

- Ecology should keep the requirement that the amount of nitrogen from all sources must be no greater than the nutrient budget based on spring soil samples.
- The permit allows extra nitrogen application based on mineralization of nitrogen.
- Ecology (2016) indicates that the uncertainty in timing and rate of mineralization and nitrification poses a challenge for accurate estimated amounts of nitrogen bioavailable in the soil. Careful consideration of accurate mineralization needs to be taken into account to protect groundwater from nitrate leaching.
- S4.J.1.c. In western WA (a high precipitation area), soil sampling on CAFOs is generally done in the fall, in order to measure residual nutrients. By spring, winter rains have often either leached or denitrified any extra nutrients, so that spring soil tests results are inconclusive and therefore not effective for nutrient management. It is recommended that only fall soil sampling be required for the >25 in precipitation category.

Ecology Response:

The nutrient budget requires that mineralization be taken into account which actually reduces the amount of nutrients that may be land applied. Mineralization of nitrogen is a challenge to project but it is accounted in the nutrient budget by requiring spring soil samples. This provides assurance that the nutrient budget is accurate by accounting for the mineralized fraction before manure application begins.

Leaching is the process that would lower soil nitrate values after the crop has ceased growing. Denitrification occurs in low oxygen environments. These are typical in fine grained soils such as clay. Coarse grained soils such as sand are highly oxygenated making denitrification unlikely. The conditions that are conducive to denitrification make it a challenge to grow a crop. The spring soil test is necessary to accurately account for the nutrients present in the soil from previous applications or from mineralization or from other sources such as precipitation. See response to special condition S4.I comment 1 and S4.J comment 14.

18. Comments on S4.J.1.e

- How often and for what parameters does irrigation water need to be sampled and analyzed for as part of the nutrient budget?

Ecology Response:

Ecology has clarified that nitrate and phosphorus from irrigation water must be accounted for in the nutrient budget. The Permittee should test often enough to adequately characterize the amount of nitrate and phosphorus in irrigation water. At least annually is acceptable, but bi-annually to quarterly would be better. Groundwater moves slowly, but seasonal fluctuations occur. If the Permittee is reasonably assured that seasonal fluctuations are not significant, then annual testing is fine.

19. Comments on S4.J.1.f

- Ecology should clarify what is meant by “Other sources of nitrogen and phosphorus”. Does it mean deposition, wildlife, or something else? As written, this requirement is vague.

Ecology Response:

Comment noted. This line has been removed from the yearly nutrient budget worksheet.

20. Comments on S4.J.1.h

- How will this be determined? Is this “estimate” based on previous years actual samples, or simply estimated values based on forward thoughts?
- The nutrient budget for each field should be based on the actual yields from the last 3 years, not a yield goal.

Ecology Response:

As specified in this special condition, crop yield estimates are based on different sources depending on availability: “*Crop yield estimate for the field based upon (in order of use depending on availability): average of the last 3 years of yields from that field, average the last 3 years of yields from similar field in the area, land grant university guidance, commercial chemical fertilizer guides, and national data sources.*”

21. Comments on S4.J.1.i

- NRCS recommends in the 590 Nutrient Management Standard that nitrogen must not exceed the nutrient budget but phosphorus (P) can be applied based on nitrogen needs following proper P loss risk assessment.
- Other considerations for P: Because of the ratio of phosphorus to nitrogen in manure, often phosphorus is applied at levels that will meet crop needs for 2-3 years, since phosphorus is not very mobile if the field is properly managed. Then, manure is not applied every year, with the nitrogen needs in alternate years being met with inorganic nitrogen sources. This paragraph would preclude this type of management. NRCS 590 Nutrient Management Standard allows for a nutrient budget to account for P for a 3 year time frame.

Ecology Response:

Nutrient budgets specify the maximum amount of nutrients that may be applied to a field during the year (i.e. cropping season). The amount that may be applied will differ depending on the nutrient used to calculate application rates, and the concentration of nutrients in the land applied nutrient source. The permit requires that the Permittee not exceed the maximum

amount of nutrients. If the Permittee reaches the maximum amount of one nutrient (e.g. nitrogen), but not the other (e.g. phosphorus) then the Permittee must stop land application so as to not exceed the limiting nutrient unless they have another nutrient source that does not contain the limiting nutrient.

22. Comments on S4.J.1.j

- How do you test for nitrogen mineralization in manure? Was this a copy-and-paste error from the soils paragraph?

Ecology Response:

Ecology has changed this language because the yearly nutrient budget is not based on nutrient content of manure, litter, process wastewater, or other organic by-products (however application rates are). This requirement now only refers to nitrogen mineralization in soils.

23. Comments on S4.J.1.k

- Ecology should clarify how Permittees should determine nitrogen volatilization. This can be variable based on time of year, ambient temperature, wind speed, application equipment, soil type, crop condition, etc. How specific do they need to be? Referring to volatilization (of ammonia from manure).
- Please clarify the definition of denitrification (does this refer to NH_4 and NO_3 ?).

Ecology Response:

Generally, Ecology has seen this value estimated based on the land application type expressed as a percentage of ammonia volatilized during land application. Ecology has clarified the permit language to refer to volatilization during land application.

The nitrogen cycle is comprised of several forms of nitrogen, and the cycle are the physical and biological processes that convert one form of nitrogen into another. Volatilization is the loss of gaseous ammonia to the atmosphere (NH_3 to N gas). Denitrification is the biological conversion of nitrate into atmospheric gas. (NO_3 to N gas).

24. Comments on S4.J.2.

- This condition is overly prescriptive. A farmer's job is to manage farms and prevent contaminating water. Farm cropping plans change between budgeting and actually working in the field in the spring. Our suggested changes to S7.C below include eliminating the submittal date and simply asking farms to use and retain nutrient budgets for their fields, including any amendments throughout the year.
- This is a bureaucratic paper exercise. A farmer adapts his nutrient applications to the needs of the crop as the season develops, it is a rare year when planting to harvest everything goes to plan. Again, I say that for the 94% of fields that are within standard, they should not have to go through this paper pushing exercise.
- Permittees should be required to submit an updated field nutrient budget to Ecology any time there is a change in cropping for the season.

Ecology Response:

Ecology has removed this special condition and partially incorporated the requirement into special condition S4.J.1 which requires the Permittee to update their nutrient budget if they make changes.

See also response to special condition S4.H comment 2

25. Comments on S4.J.4

- Ecology should clarify in this requirement: “*During land application, the Permittee must not cause direct, indirect, or precipitation related discharge to surface waters and must follow at least the minimum Field Run-off Prevention practices required by permit condition S4.N*” that agricultural stormwater discharges are allowed.
- This requirement should be revised to require tillage after land application. Many situations have occurred where manure solids were dumped on fields in piles, and left in place all winter. Because this material usually contains viable fecal coliform for many months, this continues to pollute unless the applications are carefully managed.

Ecology Response:

This special condition is now S4.J.3.b.

The goal of the permit is to apply nutrients at the times and in the amounts that the crop needs while minimizing impacts to groundwater. However, because manure is often stored in piles on fields during the winter, the Permittees should be aware that such storage means that the field (or portion of the field) becomes part of the production area while storage is taking place.

Combined:

The production area of a CAFO has a different set of requirements and conditions under which manure may be stored and discharges that may occur. Discharges from a land application field being used for storage are not allowed by the state only permit. Discharges for the same field under the combined permit may only take place during a 25-year, 24 hour storm or greater.

State Only:

No discharge to surface water is allowed.

26. Comments on S4.J.5

- If manure, litter, or process wastewater is to be applied to land not owned, leased, or controlled by the Permittee, a MPPP should be required in addition to a written permission from the landowner or controller of the land if leased.
- Ecology should clarify how this relates to export requirements to be consistent.
- Ecology should remove the requirement to have written permission if a permittee applies to a neighbor’s field. What is the purpose of value or need for this beyond the export records already required?
- Do you really think that farmers are going around nefariously applying to neighbor’s land without their knowledge or permission? This is again ridiculous, I suggest removing it. Landowners are very suspicious of overbearing government and crop farmers can easily be put off from taking manure from CAFO’s producing exactly the opposite of what we are all working towards which is the greater distribution of manure rather than its concentration on limited acres.

Ecology Response:

Ecology removed this special condition as it was duplicative with special condition S4.O.

27. Comments on S4.J.6

- Ecology should clarify how often equipment must be calibrated to comply with this condition.
- Ecology should specify how often is calibration required by Permittee for equipment used for land application that may have a variable rate. It is unclear as currently written.
- Equipment calibration should include a unit area requirement as well as liquid manure is applied in gallons/acre.
- Ecology should require that in addition to including calibration records, each piece of equipment (pumps, injectors, sprinklers, splash plate applicators) be listed by name and manufacturer.

Ecology Response:

This special condition is now S4.J.3.c.

The goal is to determine precise nutrient application rates. This involves knowing the pump rate, driving rate and manure concentration. In order to land apply and ensure that application is at the appropriate rate, the Permittee must know the rate per unit time that application takes place with the various methods of land application. For example, if an application rate is based on the speed of a vehicle, the Permittee should have calibrated their application equipment such that they know how much will be land applied at a given vehicle speed. Or another example would be a pump used for land application that is stated to pump a certain volume per unit time based on a particular horsepower motor. If the Permittee is using a different size motor, or a variable motor such as a power take-off, the Permittee should perform a calibration to ensure that they are aware of the actual pumping rate for their setup, not just the rate printed on the equipment or in documentation. Calibration does not have to occur before every application, but should take place often enough that the Permittee is confident that they are aware of what the application rate is in order to ensure compliance with their yearly nutrient budgets.

28. Comments on S4.J.7

- This section should also include no land application prior to expected freezing conditions or snow, not just when freezing conditions occur, which can occasionally occur out of season.
- Prohibitions on land application of manure are positive, but don't go far enough to adequately protect ground and surface water.
- Please refer to the NRCS Nutrient Management (590) Standard (2014) and Tech Note 14 Winter Application of Manure in Washington State (2014) for appropriate guidelines and wording that has been both vetted by experts in the field both nationally and statewide.
- Follow the NRCS Nutrient Management (590) Standard (2014) guidance and change to "When the top two inches of the soil are saturated" (p. 3) which is far more specific and applicable. For instance, "surface ponding" may not indicate saturation. A field can have a small compacted area due to machinery or wildlife for instance, and not be saturated. The area should be avoided during application (particularly if running to a waterway), but prohibiting application or the entire field because of a ponded area is not necessary.
- If the fields have berms, it should not be a problem to apply manure to frozen or snow covered fields.

- In Eastern Washington there are periods of good weather before green up that could be used for land application, a general prohibition is not appropriate.
- Remove broad calendar limits for field applications and require no application during freezing weather or on frozen soils.

Ecology Response:

This special condition is now S4.J.3.d.

The conditions in this special condition were taken from sources including NRCS Practice 590 and the Whatcom ARM, and generally restrict land application from times when application would be high risk or nutrients not needed by crops. Field conditions and field run-off management or prevention (e.g. berms) may make it possible to land apply during the times not allowed by this special condition, but the requirements are also built around when crops do not need nutrients from land application. Specific calendar dates are not used as this allows flexibility based on the year for when land application starts (T-SUM 200) and stops based on the permit conditions.

Additionally, land application outside of the growing season poses added risks to groundwater and is likely providing nutrients that the crops do not need.

29. Comments on S4.J.7.a

- Ecology should follow NRCS 590 guidance of 2 inches for determining what a frozen surface crust or deeper is.
- At what depth is the soil temperature to be measured?
- A frozen surface crust is often useful when travelling on fields in the early spring to prevent damage to the soil profile. If the soil is expected to thaw during the day and there is no rain forecast then no harm is done by applying in these conditions, again it is just getting in the way of careful farm operations.

Ecology Response:

This special condition is now S4.J.3.d.i.

Ecology has changed this permit condition to reference a 2 inch frozen layer as a frozen surface crust which is the same as NRCS Practice 590.

30. Comments on S4.J.7.c

- Ecology should remove this requirement. A field can have a small compacted area due to machinery or wildlife for instance, and not be saturated. Land application should be avoided this area (particularly if running to a waterway), but limiting application or the entire field is not necessary. This area will not leach or runoff off if contained.
- Ecology should remove the requirement that land application may not occur if soil moisture content is 90% or more. It is too variable and not relevant without site specific information.
- How is the mineralization of nitrogen determined for permit compliance?
- How is a soil moisture content of $\geq 90\%$ determined?
- No application to greater than 90% saturated soils seems unprecedented, arbitrary, and likely unworkable. For example, during application via tankers, center pivots, or

sprinklers the soil surface is often at or above saturation simply from the irrigation or application activity, yet the soil profile farther down is not. Please remove this language. This verbiage could be modified by the inclusion of the following statement: "...no applications to surface saturated soils if application will result in run off to surface water." See page 11 of 2016 Oregon permit at

<http://www.oregon.gov/ODA/shared/Documents/Publications/NaturalResources/NPDESGeneralPermit.pdf>.

- 90% of what? Irrigation water management is a science unto itself, you need to be more precise here. If what you mean is 90% of saturation then say so, otherwise it could mean 90% of field capacity.
- Water will often pond in low areas of a field or where there is compaction or a change in soil type. This should not make applications to the remainder of the field a problem if the wet area is avoided. Preventing this type of application would be a big timing inconvenience to farmers.

Ecology Response:

This special condition is now S4.J.3.d.iii.

Surface ponding could be related to compacted soils but can also be related to saturated soils in a field, which is why the statement was originally included. If a Permittee saw surface ponding it could be an easily seen surface indicator for whether land application may occur. However, Ecology has removed the surface ponding statement. Permittees must determine if a field is saturated prior to land application

Ecology has modified the condition to reference 100% saturated soil conditions.

31. Comments on S4.J.7.d

- This parameter is acceptable.
- Ecology should require that no land application occur on a field if any portion of the field has a water table that is within 12 inches or less of the surface.
- The permit allows for application of manure when groundwater is only 12 inches from the surface. This will likely result to discharges to groundwater, and in situations where these conditions are present near surface water, groundwater is likely to be in the hyporheic zone and as such will quickly move pollutants via subsurface flows to the surface water.

Ecology Response:

This special condition is now S4.J.3.d.iv.

This special condition is not stand alone and must be applied with the other special conditions in S4.J.3. Taken as a whole, these restrictions will limit land application during risky times. If the Permittee is in compliance with the permit and a groundwater discharge does occur, the discharge is conditionally authorized.

32. Comments on S4.J.7.e

- Ecology should change 72 hours to 24 hours. A half inch over 72 hours during certain times of the year on certain soils is not a problem. However, the opposite can also be true if the rain all comes at once. 24 hours is much more important in this context.

- Ecology should not specify which weather forecast site to use. What if both go down? Is using a different weather site a violation of the permit? Just specify an “approved” or “vetted” site and have listed on your webpage.
- This guidance would be more appropriate for the day of application or 24 hours, rather than 72 hours. A half inch over 72 hours during certain times of the year on certain soils is not a problem; however, this can also be the opposite if the rain all comes at once. The 72 hour threshold should be closer to 1 inch, pending the soil cannot take the moisture. Due to these reasons, 24 hours is a much more important value in this context.
- Recommend NOT specifying which weather site to use for the precipitation forecast. You can recommend some, but not require. For instance, what if both sites go down? Would it be a violation if the permit to look at Accuweather? Also note, AgWeatherNet do not do forecasts. Only current and historical precipitation.

Ecology Response:

This special condition is now S4.J.3.d.v.

Ecology has changed the requirement so that no significant precipitation is forecast within 24 hours. This is a more restrictive method of timing land application based on forecasts. 72 hours may have encouraged land application in order to “beat the forecast” leading to risky applications.

The websites included with this special condition in the draft permit were provided as a resource for Permittees, not as a requirement. However due to the confusion in the comments, Ecology has also removed them.

33. Comments on S4.J.7.f

- Ecology should clarify how Permittees must determine if a precipitation event is large enough to cause field run-off. Is this in reference to the Manure Spreading Advisory (<http://www.wadairyplan.org/MSA>)? What about locations outside of Western Washington that do not have a tool?
- This is a very vague parameter to prohibit application based on. How would this determined? Is this parameter in reference to the Manure Spreading Advisory (<http://www.wadairyplan.org/MSA>)? If so, you should be aware that that tool was created for Western Washington and only applies to those locations that are mapped. How will locations outside of the maps parameters determine this parameter?

Ecology Response:

This special condition is now S4.J.3.d.vi.

This condition relies on the Permittees knowledge of their land application fields and the performance of their field run-off prevention or management practices. Based on experience with their fields, the Permittee should have a general knowledge of when a precipitation event is large enough to cause field run-off. This special condition is also to differentiate between precipitation such as a light mist (during which land application could potentially occur) and torrential rain (during which land application must not occur) to provide some additional flexibility to Permittees instead of a blanket prohibition on land application during any precipitation.

34. Comments on S4.J.7.g

- Ecology should clarify what is meant by crop nutrient utilization being limited.
- Ecology should remove the statement no land application may occur if “crop nutrient utilizations has stopped or is limited” as it is too vague. Farmers apply to fields in the spring before the crop needs it or has even been planted. Fertilizing is a prospective not reactionary activity. See this link for discussion on timing and grass growth in early spring:
<https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em8852.pdf>.
- Ecology should revise this language to use terminology that is widely understood instead of “Spring green up”. T-Sum 200 is one standard timing guideline. Please revise this language to include understandable terms that are consistent with the guidelines of NRCS, WSDA, CDs, and other recently developed guidelines. For additional information see: <https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em8852.pdf>.
- Ecology should clarify what is meant by spring green-up. Perennial grass is green all year long. Please be specific and scientific in description.
- The term “spring green up” leaves a lot of room for interpretation. Ecology should change this to use the TSUM 200 concept of applying manure when sufficient heating has occurred in early part of the year.
- The requirement states “no application to perennial grass crops before spring green-up.” What does this mean? Is this meant for the west-side? Spring green-up on the east side of the state differs every year depending on the weather. This needs to be site specific. Field applications should occur when weather and soil conditions are appropriate and risk to water quality is minimal or zero.
- In western WA, perennial grass crops are green and growing all year, although of course the growth rate varies through the year, so how is a permittee to determine crop utilization levels in these situations?
- This condition is vague, specifically with respect to “spring green up”. The standard procedure for nutrient management is to resume nutrient application based on T-Sum 200 calculation.
- What is “spring green up”? Perennial grass is green all year long. Please be specific and scientific in description. Or more appropriately, please delete this parameter as it has no relevance.
- This is a very vague sentence. Crops often take up more nitrogen than they are in immediate need for. T-Sum 200 is a proven timing for the commencement of nitrogen applications to grass crops worldwide and the inclusion of this would be a minimum, however this is based on nutrients available to the crop and as we know with manure the nitrogen is not immediately available to the grass as it is in the ammonium form which is not readily leached and the plant has only limited ability to take up until the soil organisms turn it into nitrate. Suggested change: remove this altogether or limit manure application pre T-sum 200 to what the crop will take up within the next month.

Ecology Response:

This special condition is now S4.J.3.d.vii.

Ecology has changed this condition to reference T-SUM 200 as the starting date when land application may begin occurring, provided other special conditions are met by the Permittee.

T-SUM 200 is a well-recognized method of determining the start date for land application and suggested by many commenters for use.

35. Comments on S4.J.7.h

- What about application of solids to a field? It takes a while for the nutrients in solid manure to become plant available so application prior to 30 days is occasionally warranted.
- Ecology should consider providing more flexibility in this section because it constrains producers who use innovative land application practices which may not meet the requirements of this section but nonetheless meet, or exceed, the water quality objective of these land application requirements.
- Ecology should remove the requirement limiting land application to bare soil unless it is within 30 days of planting. This requirement is arbitrary and unnecessary. For suggested language please refer to the previous Washington permit or the current Idaho CAFO permit.
- This restriction makes some sense in Western Washington, but what about in the Eastern Washington desert, does it really matter if a manure application goes onto a field 45 or 90 days prior to planting a crop? It does to the farmer who now has to employ extra men and machinery to work in the spring when he could have been applying in the slack time in the winter. So now extra storage is necessary to cope with the increased volume of manure. This is another place where this permit will reduce the profitability of the farms. Suggested change: Allow winter applications of manure to bare soil in dryer areas.
- This parameter is mostly warranted. However, in the case of manure solids, 30 days may not be long enough. It can take a while for the carbon and organic matter in manure to become plant available. For crops that rely solely on solid manure for annual crop nutrients, application sooner than 30 days may be needed to ensure proper nutrient levels at time of planting and/or plant emergence.
- Time window for pre-planting field applications are too small.

Ecology Response:

This special condition is now S4.J.3.d.viii.

Mineralization is not a well predicted process. If nutrients are present when a crop is not taking them up, there is a risk of leaching to groundwater. Application to bare soils is not allowed unless the field is being prepared for a crop appropriate utilization especially if no nutrient budget has been developed based on the nutrients available in the field soils.

Ecology made the allowance for fields that are being prepared for crops because, especially in the case of manure solids, it takes some time for the nutrients to become available for crop use. 30 days was considered a reasonable timeframe in which land application could take place prior to planting a crop to balance risk of leaching with the time it takes for the Permittee to land apply and prepare a field. However, there is a distinction to be made that land applying when convenient is not the same as land applying for crop needs.

36. Comments on S4.J.8

- Is the updated yearly field nutrient budget to be submitted within 30 days before or after land application takes place? This wording is unclear. A spring soil sample is

recommended, exception for the Western high precipitation areas, within 30 days before application so land application rates or areas can be determined. If after land application, this is for recordkeeping.

- Ecology should clarify what it means by “harvest”. Grass and Alfalfa are harvested multiple times each year (4-8 times). If the crop is harvested twice after October 1st, are two soil tests required? Suggested change: “after harvest of an annual crop”
- Ecology should not allow land application to occur in the fall after the growing season. There is too high of a risk for nutrient loading. We have observed and documented many risky applications undertaken in the winter in Whatcom County. Because there is no uptake of nutrients during the winter, it is never appropriate to spread manure in the winter.
- Ecology should clarify that that the Permittee is required to submit an updated yearly field nutrient budget to Ecology showing that nutrients from fall land application are necessary 30 days prior to land application taking place, or otherwise require approval from Ecology for this update before application occurs. Currently, the language is ambiguous as to whether the updated nutrient budget must be submitted within 30 days before or after land application.
- The October 1 date is inconsistent with the dates of October 15 and 30 that are found in the current guidelines used by NRCS, CDs, and WSDA. Please revise to be consistent with current guidance such as NRCS 590.
- Language in this section is inconsistent, arbitrary, or erroneous.
- Language in first paragraph (“...fall soil tests showing...current soil nutrients will not provide...crop needs before...spring.”) conflicts with the third paragraph indicating a producer must show nutrient are needed “...within 30 days.” Crop nutrient needs are not based on 30 days. Revise and clarify to be consistent with first paragraph and with nutrient budgeting process requirements. See also: <https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em8852.pdf>.
- The fourth paragraph references S4.J 7, which is vague. Hence, S4.J 8 is equally vague.
- What we are trying to achieve is the protection of water quality, both surface and ground. Putting these sort of limitations on applications are not going to help. Wording needs to be crafted that doesn’t erase good opportunities to apply manure in an agronomic way. Putting excessive limitations on winter applications will lead to excessive stress on storage systems in the spring and increases risk of excessive or poorly timed applications in the spring. Every farm is different and there needs to be the flexibility to use systems such as the ARM program to intelligently apply manure as a fertilizer instead of big dumb buffers and arbitrary dates.

Ecology Response:

This special condition is now S4.J.4.

The goal of the permit is to apply nutrients at the times and in the amounts that the crop needs while minimizing impacts to groundwater. Ecology has clarified that this section refers to fields with double cropping or winter cover crops. For a double crop/winter cover crop the Permittee is required develop a second yearly nutrient budget for the field using the nutrient results of the fall soil test to determine if the field already contains enough nutrients for the second crop/winter cover crop. If the field already contains enough nutrients, no land application is allowed.

The second nutrient budget for a field is then submitted along with the first with the annual report. See response to special condition S7.D comments.

See also response to special condition S4.J comment 4.

37. Comments on S4.J.9

- The occurrence of waste storage ponds filling beyond their design capacity is a relatively frequent event. When this has happened, the procedure up until now has been for owners/operators to apply a portion of the stored waste water to fields during winter months (preferably in drier fields, maybe in fields with cover crops or other vegetation that can utilize some of the nutrients even during the winter). Is this now going to be an emergency situation requiring Department of Ecology authorization?
- Ecology should clarify the process of approving emergency land application. What is the turnaround time? Usually these issues require immediate attention. What happens if the emergency occurs on a weekend?

Ecology Response:

This special condition is now S4.J.5.

The goal of the permit is to apply nutrients at the times and in the amounts that the crop needs while minimizing impacts to groundwater. The message that Ecology received from industry is that producers have plenty of storage, so the comments that exceeding design standards occurring frequently is concerning. This condition was included because it was believed that situations in which winter application was required because lagoon design capacity was exceeded would be rare.

Ecology has changed the language of this permit condition to require reporting of emergency situations that result in land application within 24 hours of the Permittee completing land application.

S4.K. and S4.L Adaptive Management

Commenters:

<ul style="list-style-type: none"> • Abdirahman Mohamed • Amelia Marchand • American Farmland Trust • Dena Jensen • Environmental Engineering Associates • Harold Wershow • Lummi Indian Business Council • Lummi Nation • Marvin Hoekema • Mary Baeckler • Mike Gross 	<ul style="list-style-type: none"> • N3 Consulting • Natural Resource Conservation Service • RE Sources for Sustainable Communities • Rod Vande Hoef • Soiltest Farm Consultants, Inc • Sophia Ressler • South Yakima Conservation District • Stephanie Smith 	<ul style="list-style-type: none"> • U.S. Environmental Protection Agency • Washington Farm Bureau • Washington State Dairy Federation • Washington State Department of Agriculture • Western Environmental Law Center • Whatcom Conservation District
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Range of Comments:

1. Additional suggested adaptive management actions

- When soil test levels trigger adaptive management, additional nutrient sampling (manure) and equipment calibrations could provide a more accurate accounting of nutrients that would assist in the budgeting process.
- Spring testing should also have a similar Adaptive Management Action Level Matrix with consideration of how well last year's manure management went based on fall soil samples. This would make for a solid adaptive management approach.
- The idea behind all this is to prevent nitrogen from getting onto the groundwater. If you have a high soil test and your moisture sensors show that no water/nutrients are moving past the root-zone into to the groundwater, you have no discharge. Recordkeeping showing irrigation time and amounts, nutrient applications showing time and amounts, and Department of Agriculture inspections will be more effective than the matrix system. There are too many variables in soil analysis to use as part of the regulatory process.
- Ecology should consider requiring additional sampling below the root zone to determine if nitrate is leaching out of the root zone when adaptive management triggers exceed D4 or W2, 3 out of the last 5 years.
- Testing to soil depths of the 2nd and 3rd foot should always be required. The 3rd foot is below root zones and would give a good indication of whether nitrogen is leaching into groundwater.

Ecology Response:

Spring soil sampling matrix would be redundant as this is how the permit is set up. Fall soil sample analysis will result in a field falling into one of the ranges in the adaptive management matrix. The Permittee must then modify their field management the next year starting in the spring to address any adaptive management requirements. Winter leaching would not be an excuse to not modify land management activities.

Additionally, where fall soil nitrate values are high or very high for three consecutive years, the Permittee must take additional steps to reduce fall soil nitrate values. If values are very high for 3 consecutive years and the Permittee is not stopping land application of nutrients, then the Permittee must implement groundwater monitoring. A trend of very high fall soil nitrates indicates a very high risk to groundwater. Groundwater monitoring would then demonstrate the level of impact to groundwater below a land application field.

2. Goal of adaptive management

- The permit should clearly state that the goal of the adaptive management soil program is to minimize post-harvest nitrate levels in the root zone. That is, to demonstrably work toward and achieve nitrogen levels in post-harvest soils that are as close to zero as practicable.
- In the decision matrix for adaptive management, the overall goal should be to reach Action Level D0, instead of stating at D4 and 5 that the goal is to get to D2 and 3, as is currently indicated.
- For fields in which nutrient levels are elevated, the permit should ideally require the achievement of specific, measurable, and substantial reductions of soil nitrate and phosphorus concentrations over specifically defined increments of time. This level of

specificity is needed to ensure the effectiveness of field management, and to ensure that the terms of the permit are enforceable.

Ecology Response:

The goal of adaptive management is for Permittees to take actions that will lead to lower fall nitrate concentrations through crop uptake of nutrients. Unfortunately, environmental variability makes it difficult to predict how a cropping season will turn out. Therefore, requiring set decreases in nutrient concentrations within a field would automatically put Permittees out of compliance with the permit for factors beyond their control.

3. Compliance with and enforceability of adaptive management

- As currently worded it is not clear how the adaptive management provisions provide an enforceable mechanism to achieve the goal of nutrient balance such that excessive nutrients are not left in the field soil at the end of the growing season.
- There is no time limit or enforceable provision in the event that the selected option proves unsuccessful. In the meantime, the permittee may continue to apply nutrients to the field.
- Ecology should include additional permit language that further defines for the permittee and public how Ecology will determine compliance with these adaptive management actions.
- The permits adaptive management approach allows perpetual non-compliance.
- This sections of the permit should be modified to provide specific numerical limits and to clarify that exceedances of the limits constitute a permit violation.

Ecology Response:

Benchmarks trigger an action by the Permittee. Limits are numbers which cannot be exceeded without violating requirements of the permit. The fall soil nitrate concentrations listed in Table 3 are benchmarks, not limits. Therefore, if a Permittee exceeds a number in one of the ranges it is not a violation. The exceedance triggers a set of actions that the Permittee must take. If the Permittee does not take the required actions, they are then violating the permit requirements and could be subject to enforcement.

Because property ownership changes and environmental conditions change, Ecology decided not to use numeric limits for soil nitrates. To do so may automatically cause many Permittees to be out of compliance with the permit because of factors beyond their control.

4. Using trends for adaptive management

- Ecology should consider using more than one year's soil sample analysis before requiring adaptive management. DNMP's strategy includes a target soil nitrate level ≤ 30 ppm (approximately 110 lbs/Acre) in the top foot (0-12 inches) across Washington regardless of precipitation amounts. The compliance trigger to require adaptive management considers 3 out of the last 5 years. If soil test levels exceed 45 ppm (approximately 165 lbs/Acre) for 3 or more years of the last 5 years, we require adaptive management. This takes into account variables beyond the permittees control such as weather conditions, lack of irrigation water resources, etc.
- This matrix does not take into consideration what crop is being grown, depth of rooting, whether or not the field is a double cropping system, moisture monitoring, etc. A soil test

is a “snap-shot in time” and should be used as a planning tool only. It was never meant to be a regulatory tool.

Ecology Response:

Adaptive management is something that should be done automatically. Adjusting nutrient and water applications based on changing conditions is good management of a land treatment system. Adaptive management is not intended to be a compliance consequence, but a set of management strategies that should be considered to protect the environment and the health of the crop grown.

The soil nitrate test is a tool to make informed decisions about manure management. It is not used as a compliance measure. The adaptive management matrix is a tool similar to that used by Sullivan and Cogger (2003) and presented in other literature.

Soil nitrate is a snapshot in time and that is why the permits use it for planning and management purposes only, not as permit limits.

5. There is no way to definitely determine if groundwater is impacted without testing groundwater quality.

Ecology Response:

See response to special condition S5 comment 1.

6. Comments on Table 3

- Lab soil tests give results in ppm or mg/kg. Conversion to Lbs/acre is not difficult but to be accurate requires bulk density testing of the soils which is not simple. Estimations are fraught with issues especially in soils with a history of manure use as the bulk density reduces as organic matter increases. Suggested change: Use only ppm or more correctly mg/Kg.
- Nutrient values don't appear to match recommendations in peer reviewed scientific literature. There should be a reference to where these numbers were derived.
- The ranges also should be presented in both lbs/acre and ppm to accommodate a variety of audiences and easy review among scientific literature.
- Current language uses pounds per acre section, but S4.K.2 uses parts per million. Ecology should use consistent units.
- The value is in ppm. Which is correct?? Put both pounds/acre and ppm in the table for clarity and ease of use.

Ecology Response:

The nutrient value ranges selected for use in the permits are the ranges that WSDA has been using as its ranges for the Dairy Nutrient Management Program and are consistent with values in peer reviewed scientific literature.

The conversion of ranges from ppm to Lbs/Acre is based on an average conversion factor of 3.65 which is from:

Marx, E.S., Hart, J., Stevens, R.G. (1999). *Soil Test Interpretation Guide*, Table 13. Oregon State University Extension. Pub No EC 1478.

Ecology has modified the table to include fall nitrate concentration range units of ppm and Lbs/Acre.

7. Comments on S4.K

- This section has two sets of S4.K.1-3, which makes it difficult to reference specific sections. Perhaps a different configuration could eliminate this problem.
- If we are advised to “ignore the D” (or W), then why put it there in the first place?
- Reporting for higher levels is currently done verbally with WSDA inspection staff who have an acceptable knowledge of agronomy, what possible good would it serve to report all of this to Ecology. It is just work and paperwork for no good water quality outcome.
- The permit should be modified to provide specific numerical limits (in soils) and to clarify that exceedances of the limits constitute a permit violation.

Ecology Response:

Ecology has modified the format of the adaptive management portions of the permit in order to provide better clarity and ease of use by converting the list of bullet points into a table format.

Reporting is how compliance with permits is determined along with site inspections. All water quality permits issued by Ecology require reporting.

See also response to special condition S4.K comment 2 and 3.

8. Comments on S4.K.2

- It may reduce confusion with permit requirements to utilize the same units in both the Adaptive Management tables (uses lbs/Acre) and in the narrative S4.K.2 (uses ppm). Ecology should use both lbs/Acre and ppm.

Ecology Response:

See response to Special Condition S4.K comment 6.

9. Comments on S4.K.3.a

- The example of "historic land use" is given for a reason for reaching Action Levels 04 and 05. This is a terrible example and should be replaced with a real excuse. Historic land use should be accounted for in the MPPP, where all sources of nitrogen should be accounted for and therefore high levels of nitrogen should never occur due to historic conditions as manure should not be applied to the land if it has high levels of nitrogen to begin with.

Ecology Response:

The spring soil sample will account for the historic nutrients in a field as part of a nutrient budget. However, in some cases, the Permittee may not be able to reduce nutrient levels to lower amounts over a single season due to various factors (e.g. organic matter mineralization, environmental conditions). Showing that a field has historically high nutrient levels prior to the Permittee controlling the field is a way for the Permittee to demonstrate over time that their adaptive management actions are reducing nutrient levels.

10. Comments on S4.K.4.e

- Ecology should consider using different terminology than “engineering report”. Does this report need to be prepared by an engineer, or could it be prepared by conservation district staff, NRCS staff, university staff, Certified Crop Advisors, or farmers with nutrient management training certification? If so changing the terminology may make what is expected in the report more understandable to Permittee’s.
- What is an “engineering report”? How does that relate to nutrient management?
- An engineering report is required that contains the reason for continued high fall soil nitrate. This work would be better performed by those with expertise in agriculture production such as Certified Planner, Professional Soil Scientists and Agronomist, or Certified Crop Advisor. We suggest the same condition apply for trigger level W3.

Ecology Response:

Ecology has removed the requirement to develop an engineering report from the very high level on the adaptive management matrices.

11. Comments on Table 4

- Nutrient values don't appear to match recommendations in peer reviewed scientific literature. There should be a reference to where these numbers were derived.
- The ranges should be presented in both lbs/acre and ppm to accommodate a variety of audiences and easy review among scientific literature.
- The Fall Soil Test Nitrate values in the different categories are for grass forage crops. There is a different table with different values for annual crops such as corn silage. See Extension Bulletin EM8832-E for both tables and the target fall soil test nitrate values. <https://catalog.extension.oregonstate.edu/em8832>.

Ecology Response:

The soil nitrate value ranges used for fall soil nitrate analysis and adaptive management are the same as those used by Washington Department of Agriculture. These values are also consistent with those advocated in the literature by other researchers. (Sullivan and Cogger, 2003; Bary et al., 2000; Kratochvil and Steinhilber, 2013; Kowalenko et al., 2007; Drury et al., 2005; Staben et al., 2003; Iowa State University, 1997; Laboski, 2008; Cornell University, 2012; Camberato et al., 2013; Heckman, 2003; and Hart et al., 2009)

See response to special condition S4.K Comments on Table 3.

12. Comments on S4.L.2

- S4.L.2. Add the paragraph in S.4.K.4.b. (crop failure, unusual environmental conditions, etc.) to this section as well as the other sections. It’s missing.
- S4.L.2.a. Suggest the following wording: “Review (and revise as needed) the field nutrient budget, nutrient application schedules, and assumptions used.”
- S4.L.2.b. Suggest the following wording: “Review (and revise as needed) crop yield expectations for the field.”

Ecology Response:

Ecology has modified the permit language for adaptive management. Instead of a bulleted list, Ecology has transformed it into a table format for ease of use.

The modified language in the adaptive management table includes the requirement to review crop yield estimates and to document reason(s) for a fall soil nitrate test causing a field to be categorized as a risk level of high or very high. This is to develop a record of circumstances that will cause high fall soil nitrate levels in a field and so that Permittee's are not enforced upon for circumstances beyond their control (e.g. cold year, more rain than normal, etc).

13. If 15% organic matter level becomes a limit for applications of manure than areas such as the Enumclaw plateau will be severely economically disadvantaged by having to export their manure.

Ecology Response:

The 15% organic matter is not a limit but it must be considered for developing a nutrient budget and adaptively managing to meet permit requirements. If it is not considered, then over-application of manure, litter, process wastewater, or other organic by-products is likely to occur because of mineralization of nitrogen from the organic matter.

S4.L. Adaptive Management for Areas with > 25 Inches Precipitation

Comments related to special condition S4.L were combined with the comments related to special condition S4.K because the same topics and comments were directed at both sections.

S4.M. Irrigation Water Management (Now S4.L in both permits)

Commenters:

<ul style="list-style-type: none"> • Benjert Farms • N3 Consulting 	<ul style="list-style-type: none"> • Natural Resource Conservation Service • RE Sources for Sustainable Communities 	<ul style="list-style-type: none"> • Soiltest Farm Consultants, Inc
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Range of Comments:

1. Ecology should require that water moisture sensors be used to ensure that water applied from precipitation, irrigation, and liquid manure applications does not exceed the water holding capacity in the top two feet of soil.

Ecology Response:

The permit requires that the Permittee manage their irrigation water. How this is done is left up to the Permittee, but moisture sensors are one way to do this. Ecology is not requiring the use of moisture sensor because they are expensive to install and maintain and may not be within the means of many producers.

2. For irrigation water management, NRCS recommends placing emphasis on the importance of monitoring soil moisture contents and soil nutrient contents, before and after irrigation, (with or without liquid manure) to prevent percolation of water beyond the root zone (3 ft).

Ecology Response:

Comment noted. The permit requires that the Permittee manage their irrigation water. How the Permittee actually does this is left up to the Permittee, but ideally the Permittee would also consider the factors described in the comment. Managing irrigation water must be taken into account with the other permit requirements such as (in general) land applying manure,

litter, or process wastewater from the right source, in the right form, at the right time, and at the right rate.

3. Many farms are working with poor quality irrigation water, a low level (5%) of over irrigation is the only way that they can prevent degradation of their soils.

Ecology Response:

This is an understandable concern, but without a specific parameter to indicate what is causing the “low quality” Ecology cannot directly address the concern. However, if the concern with poor quality irrigation water is high nitrates, those nitrates must be accounted for in the yearly nutrient budgets.

4. How long is the time period during which the permittee evaluates the total amount of water applied that must not exceed the water holding capacity of the soil in the top two feet of soil plus crop needs? The previous few days? The previous week?

Ecology Response:

Ecology expects that irrigation water management will need to be an ongoing assessment as crops are irrigated throughout the growing season. Any time irrigation occurs, the amount of water applied should not exceed the water holding capacity of the soils in which the crop is growing. For areas with < 25 inches of precipitation, this would be the two feet of the soil profile. For areas with ≥25 inches of precipitation, this would be the top foot of the soil profile. Ecology has clarified the language of this permit condition to only refer to not exceeding the water holding capacity.

5. Is this based on soil locations as mapped in the soil survey, or soils as they actually occur in an individual field?

Ecology Response:

Soils as they actual occur in each individual field or management unit.

6. Irrigation Water Management: the following phrase may be confusing - "does not exceed the water holding capacity in the top two feet of soil plus crop needs."

Ecology Response:

Ecology has simplified the statement by removing the “plus crop needs” portion.

S4.N. Field Run-off Prevention Management Practices and Discharge Prevention (Now S4.M in both permits)

Commenters:

<ul style="list-style-type: none"> • Adam Warthersen • Andrew Dykstra • Art & Theresa Mensonides • B7 Engineering • Barbara Gustafson • Barbara Thevenaz • Bel-Lyn Farms • Bovine Drive, Inc • Center for Food Safety 	<ul style="list-style-type: none"> • Lagerway Dairy • Larry Helm • Larry Stout • Larson Dairy • Lee Bode • Lenssen Dairy • Lovel Pratt • Lummi Indian Business Council 	<ul style="list-style-type: none"> • Sherman Polinder • Sidney, Cornelius, & Aaron DeBoer • Sierra Club • Siobhan Ring • South Yakima Conservation District • Spokane Riverkeeper • Steensma Dairy
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<ul style="list-style-type: none"> • Charles Antholt • Cory Kuipers • Dave Boon • David Lukens • Dr. Paul Lindholdt • Dwayne Faber • F.A. Farm • Fransisca Meulen • Friends of Toppenish Creek • Green Acres Dairy • Hillview Dairy • Jason Sheehan • Jason Vanderkooy • Jeannette Folkertsma • Jeff Rainey • Jeremy Visser • Jim Hansen • John Miller • John Roskelley • Jon Vanderkooy • Joy Gilfilen • Karen Kooy • Karen Steensma • Kathryn Vestal • Kelley Callahan • Kip Dunlap 	<ul style="list-style-type: none"> • Lummi Nation • Lynne Penndleton • Markus Rollinger • Mellema Farm • Mensonides Dairy, LLC • Mike Schoneveld • Mt. Baker Vet • N3 Consulting • Natural Resource Conservation Service • Northwest Indian Fisheries Commission • Oxbow Dairy • Paradise Jerseys • Paula Rotondi • Pomeroy Dairy, LLC • Puget Soundkeepers Alliance • RE Sources for Sustainable Communities • Rebecca Wolfe • Rev. Ken Jones • Rich & Ann Appel • Rick Poortinga • Riverbend Dairy, Inc • Rod & Sharon Tjoelker • Ru-Ben Dairy • Senator Warnick, 13th Legislative District 	<ul style="list-style-type: none"> • Stephanie Smith • Steve Groen • Swinomish Indian Tribal Community • Swinomish Indian Tribal Community • Theo & Cheryl VanBerkum Heeringa Dairy, LLC • Turner & Co. • Van Berkum & Sons Dairy • Vreugdenhil Farms • Washington Cattlemen's Association • Washington Farm Bureau • Washington State Dairy Federation • Washington State Department of Agriculture • Washington State Department of Fish and Wildlife Region 3 • Wesen Farms, Inc • Wesen Organic Dairy • Whatcom Conservation District • Whatcom Family Farmers • Wil-O-Acres Goat Dairy, LLC • Yakima Valley Dairy Federation
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Range of Comments:

1. Setbacks for state only groundwater permit

- Why is Ecology requiring surface water buffers in a state permit that is triggered by ground water issues?
- Why is Ecology dictating surface water buffers in the state permit in a way that completely ignores two decades of work and effort put in by farmers, NRCS and Conservation district staff to establish site specific guidelines that make a significant difference to water quality?

Ecology Response:

Ecology has removed the setback requirements that were in the draft permit which referenced specific setbacks and alternatives based on federal CAFO rules. However no surface water discharges are authorized from the production area or land application fields by the state only permit (see also response to special condition S1.A comment 2). This means that in place of specific setbacks Permittees covered by the state only permit must ensure that no discharge, even agricultural stormwater, occurs from their land application fields. Ecology is not specifying how the Permittee must accomplish this task but has included general statements about the design, installation, and maintenance of technologies and activities used in order to ensure consideration is given to determining if they will actually prevent discharges from land application fields.

2. When setbacks are required

- The buffer requirements should be waived when surface water such as an irrigation canal is above the surface of the field. These situations do not allow manure runoff; the manure would have to go uphill.
- Please retain the 100 foot setback from top of the bank distance for calculating manure application rates.
- Require buffers around all potable water wells.
- Please include and specify that the 100 foot setback be applied to ditches and V-ditches, as well as other downgradient surface waters, open tile line intake structures, etc.

Ecology Response:

Ecology has clarified that setbacks must be in place for areas where there are down gradient surface waters or to conduits to surface and groundwaters. Conduits to surface and groundwater do not necessarily need to be down gradient before a setback is applied. They could be in the middle of a field, in which case they are not down gradient of the field, but would still allow manure, litter, or process wastewater to pass into surface or groundwater without a setback in place.

Combined:

Ecology is retaining the setback requirements as set out in 40 CFR 412.4(c)(5) which are the 100-foot application setback, 35-foot vegetated buffer, and compliance alternative with pollutant reduction at least equivalent to the 100-foot setback.

Berms are the exception as they were included in the preliminary draft and can be considered in appropriate circumstances to be equivalent or better in pollutant reduction than the 100-foot setback. 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), can prevent run-off from a field. A field where run-off is prevented would meet the performance requirement that the alternative practice have equivalent or better pollutant reduction as the 100-foot setback.

State Only:

See response to special condition S4.N comment 1.

3. Nutrient use in setbacks

- Please clarify the statement: “no application of manure, litter, process wastewater and other sources of nutrients...”. As it reads, no nutrients may be applied with 100 feet of waters or within 35 feet if a vegetative buffer is in place.
- Does this mean no manure or chemical fertilizer? Part of the recommended guidance for buffers is that you keep them healthy and functioning. A lack of fertilizer may be detrimental and reduce the effectiveness of the buffer. Referring to “*may not have manure, litter, process wastewater, and other sources of nutrients applied to them*”
- What about chemical fertilizer? According to the paragraph above, this is not allowed. Referring to whether chemical fertilizer is allowed in the 100-foot setback or 35-foot vegetative buffer.

- The current draft includes a prohibition of land application of all nutrients in buffers and setbacks. This virtually eliminates the option of a productive 35-foot vegetated buffer due to lack of nutrition needed for crop-plant growth.
- Ecology has stated at meetings that commercial fertilizers are allowed within the buffers. Allowing the use of commercial within this setback assumes that modern application techniques used for applying commercial fertilizer are precise. If precision is the key, this should also support the use of manure application by precision methods within the 35 foot buffer (e.g. manure injection at the appropriate rate, timing, soil water content, slope, etc.). In addition, Organic dairies may not be able to comply due to the fact they are restricted from using synthetic fertilizers.
- Does the second paragraph mean that inorganic fertilizers may not be applied to buffers or setbacks? How about manure deposited directly by grazing animals in a managed grazing system? Haying/silage making or flash grazing may be used in order to maintain herbaceous buffer vegetation in a dense vigorous sward, which will help discourage the encroachment of weeds such as blackberry, tansy ragwort, poison hemlock, Japanese knotweed, etc. while still functioning as a buffer and providing some forage from these acres for the livestock operation.
- No nutrient application to buffer area is problematic for two reasons. First, it is unduly restrictive in the dry summer months when the transport mechanism (rainfall) is absent and the runoff of nutrients and bacteria are unlikely. Second, vegetative buffers require nutrients in order to function as intended. Prohibiting nutrient applications to these areas are antithetical to your guidance that they are to be kept healthy and functioning. See the National NRCS Conservation Practice Standard Filter Strip (Code 393) (2014), to which most “buffer” designs are designed to.
- Application of manure to the buffer area in the dry, early summer months (June or July) should also be considered allowable (following recommended seasonal setback distances of 10 feet) for forage growth and soil health.
- Is the grazing of livestock considered an “application” of manure? If so, would it be subject to a 100 foot setback within a swale?
- Is chemical fertilizer application to the “vegetated buffer” allowed as part of good management? The previous provision appears to prohibit this.
- Organic farmers not allowed to utilize synthetic fertilizers resulting in additional loss of operational land due to buffer requirements.

Ecology Response:

Combined:

Chemical based commercial fertilizers are allowed to be used in setbacks. The language in the draft permits was unclear about this so Ecology has clarified the language. Additionally, for those Permittees such as organic dairies that cannot use chemical fertilizers, there is the option of the alternative to the 100-foot setback. The Permittee has the option of submitting an alternative to Ecology for review and approval.

See also response to special condition S4.N comment 1 and 2.

State Only:

Since this permit does not allow surface water discharges from land application fields, as long as no discharge is occurring, appropriate sources of nutrients may be used in whatever setbacks or other technologies, infrastructure, or activities are chosen by the Permittee.

4. Compliance alternative setbacks

- Please clarify the process for how an alternative to the 100-foot setback may be approved by Ecology after the permit is issued. It is also our understanding that the alternatives to the 100/35 foot restriction must be overtly stated in this permit (even though EPA does not do that, and Oregon and Idaho permits use language similar to S4.N.2)
- There is no documentation as to the effectiveness of the 100 foot setback to compare an alternative against. If we do attempt to compare, should be look at N, P, pathogens, sediment, or what?? Need to provide process to do this. Referring to what parameters need to be accounted for in determining equivalence with 100-foot setback.
- The compliance alternative lacks a means to evaluate effectiveness and is overly vague. The 100-foot setback does not provide adequate treatment of run-off so any alternatives proposed as equivalent will not provide adequate treatment. This is not an enforceable permit condition and should be removed from the permit.
- What is the process to do this? Referring to the process by which an alternative process is approved by Ecology.
- There is no documentation as to the effectiveness of the 100-foot setback; not for nutrients, sediment, or pathogens, which should all be considered separately. Neither Ecology or EPA can provide documentation, references, science based justification, and/or literature supporting the 100 foot setback. The lack of any comparative, concrete data poses an impossible barrier to proposing compliance alternatives that will provide pollutant reductions equivalent or better than the reductions that would be achieved by the 100-foot setback. It is incumbent on your agency to describe the performance of this practice under all environmental conditions that are likely to be experienced. Failure to do so, yet impose this requirement, is arbitrary and capricious.
- We are concerned about whether we will be able to provide public comment on field run-off practices or any other element of a manure pollution prevention plan, since no public comment period or public notice is required for existing, yet unpermitted facilities and it is unclear whether compliance alternatives will be explained in the Notices of Intent for new facilities.
- The compliance alternatives provides no meaningful benchmarks or criteria that provide direction to either applicants or Ecology staff as to the adequacy of proposed alternative measures or the elimination of a buffer requirement at all. A discussion is warranted to detail how this equivalency will be evaluated. In the absence of specific methodological direction, we are concerned that the Department will not have adequate information or consistent information to insure that the permit meets the requirements of state and federal law to prevent and control pollution, protect the designated uses, not cause or contribute to a violation of water quality standards, apply AKART, and ultimately protect water quality.
- Ecology provides no information or methodology regarding how these alternatives will be designed and reviewed to determine whether they meet the requirements of the permit (e.g. AKART, water quality standard compliance, protection of the designated uses). As

such this permit condition is vague and will be unenforceable, and therefore should not be used in the permit.

- Ecology should add clarification to the provision for proposed compliance alternatives to the 35-foot vegetated buffer or 100-foot setback. The draft does not clearly outline what the requirements may be or how they can be met.
- Ecology should require that the operator, or any technical assistance provider relied on by the operator, document the water quality protection factors that were considered and addressed in developing site-specific riparian buffer prescriptions.
- Allow for seasonal variation in buffer requirements.
- Riparian buffer requirements should be backed by science and follow best management practices.
- Require science based buffer requirements to protect water quality and riparian habitat for salmon bearing streams.
- Work with the Department of Fish and Wildlife to identify alternatives to buffers.
- Allow for filter strips for rainwater runoff.
- Six foot wide berms are a better and more sound solution to prevent pollution from run off than a 100 foot buffer requirement.

Ecology Response:

Ecology acknowledges that EPA has not provided a range of estimates for how effective the 100-foot setback's performance is. EPA's interpretation of equivalency is that it will be demonstrated on a field by field basis. If a Permittee decides that they would like to implement a compliance alternative, they must submit a request to Ecology along with the information and data supporting the determination that the alternative will be as effective as the 100-foot setback.

Ecology suggests submitting the request and information early enough that Ecology has time to review the request before the Permittee plans to implement the alternative. Because the setback is an effluent limitation, the Permittee must submit public notice that they are planning to implement the alternative. Ecology review beforehand will help reduce future delays from public comment. The public notice must be associated with a minimum of a 30 day public comment period. Therefore, a Permittee should expect to submit a request to Ecology at least 30-45 days in advance of Ecology making a decision to approve the alternative. This time period will probably be longer in instances where little supporting data and information is available or provided, and in instances where Ecology receives comments on the proposal.

5. Other suggested setbacks

- Here is a list of alternatives that should be included in this alternative practices section. These practices will achieve the goal of providing more water quality protection than simply a 100-foot no-application setback:
 - Berms, dikes, raised road beds or other physical barriers (temporary, seasonal or permanent) used and maintained so that applications of nutrients cannot run (uphill) into waters of the state.
 - Precision placement technologies - Placement of manure is done via precision methods such as shanking, injecting, drop hose, splash plate, etc., at a rate and time to prevent migration of nutrient to waters of state. Setbacks of 1-2 meters when low or

- no rain or irrigation risk and zero application set back from barriers/berms are used to minimize off field flow risk. (See Dr. Anderson's paper at <http://wastatedairy.com/wp-content/uploads/2016/07/Andersen-Manure-Applicaiton-Setbacks-Science-Assessment.pdf>.)
- Reduced setbacks when mechanical incorporation of manure within 24 hours and or before risk of significant rain event occurs. (See above paper by Anderson.)
 - No, or very small, buffers (1-6 feet) when seasonal ditches are dry and are not expected to flow for weeks or months. Performance standard is and should be to not get manure or fertilizer in ditches. (See <http://www.wadairyplan.org/MSA>.)
 - We support and encourage allowing the practice recommendations in the Application Risk Management (ARM) program. Farmers, especially in northwest Washington are already using this system, which has established guidelines for setbacks, timing, weather prediction information, variable width application setbacks, and application risk management practices. (See <http://whatcomcd.org/manure-application-setback>.)
 - Setbacks and no-application zones are influenced by risk from in-field to off-field flow. Reductions in flow can be reduced by in-field practices and soil treatments such as pre-disking before application, no-till systems, proper use of subsoiling, contour tillage and planting (NRCS Code 330), and field shaping. All show water quality protection benefits such as reducing field flow, reducing concentrated flow, and promoting infiltration. These practices are discussed in this EPA guide for permit writers: https://www3.epa.gov/npdes/pubs/cafo_permitmanual_appendixk.pdf.
 - Smaller setbacks are supported by science when applications are made when rainfall not predicted within 48-72 hours.
- In northwest Washington, the ARM program seems very prudent and supported by science outlined in this paper by Dr. Emberson: <https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWVpbnx3YWRhaXJ5cGxhbmxneDo2MjY1NGZjNjIwZTEzZTJk>
 - Seasonal manure application setbacks (10, 40, 80), ARM, injection, disc/immediate incorporation, up-gradient, berm, road, water quality testing, water control structure, seasonally dry areas. Referring to alternative practices to the 100-foot setback
 - Many of the NMPs in Washington include a variable buffer that requires consideration of forecasted weather and limits type of equipment that can be used for application. This method has been shown to be effective when used properly.
 - The default to the 100 foot buffer is understandable, but not scientifically sound, desirable, or necessary. Ecology should consider the guidance in the NRCS publication, Part 650, Engineering Handbook, Chapter 9 - Diversions. It provides an effective, easy and economical solution to the regulatory requirement to do more to prevent runoff from fields.
 - Ecology should consider abandonment of the 100' proposal, and allow producers to work with their local Conservation Districts and Engineers using NRCS methodology which has proven itself over long term, and even extraordinary storm events where Ecology would expect field runoff to occur.
 - Ecology should allow a producer and his engineers to choose, construct and maintain the best performing, most economical design, and simply hold producers to a reasonable performance based standard.

- The 100 foot and 35 foot “no application” buffers should be site specific BMPs not all-inclusive. This would cause a large amount of cropland acres being removed from production. There are many alternative BMPs that can be used and are being used cost effectively. These include, dikes, diversions, berms, injection, tail-water recovery systems/pump back systems. Let NRCS, WSU & CD’s work with the producers to determine what is best for their facility.
- Ecology should consider the following compliance alternatives for inclusion in the permit:
 - The Whatcom CD developed Seasonal Application Setback Distances based on NRCS guidance (Agronomy Tech Note 14, 2014) and best available science, to help producers determine the distance they should be from a waterway at certain times of year to prevent a runoff event. The guidance is based on historical Western WA precipitation timing, common manure application practices, and available science for runoff characteristics (e.g., *Conservation Buffers*, USDA 2008). This table outlines the recommended manure application setback distances (in feet) for Western WA from Whatcom CD. There are a few caveats to the guidance as noted in the footnotes. It should be noted that the greatest distance is listed at 80 feet for Oct-Feb, but that that distance can be increased to 100 feet as an acceptable compromise with the CAFO Permit guidelines.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Feet	80 ⁴	80 ⁴	40	40	40/10 ^{1,2}	10 ²	10 ²	10 ²	40	80	80 ^{3,4}	80 ^{3,4}

¹This is a floating date and should be evaluated based on current weather and forecast information.

²A big gun applicator should NEVER be closer than 40 feet at any time of the year due to drift.

³Application during November and December is typically not necessary and must be shown to be agronomic before manure is applied.

⁴Any manure application made from November-February must have a winter spreading plan in place and apply in accordance to the DNMP and NRCS Agronomy Tech Note 14 Winter Spreading guidelines.

The variable setbacks allow fertilization and maintenance of the entire field to promote vigor and forage quality for maximum nutrient uptake, soil quality, and filtering capacity, while also providing a large setback during high risk times of the year. It is recommended that anyone applying manure check their local forecast before applying at all times of the year and make adjustments to the setback distance as appropriate. Soil infiltration rate and holding capacity must not be exceeded at any time. Larger setback distances may be recommended under certain circumstances where critical areas such as swales, wells, fence lines or protected waterways are present, or where there is a slope greater than 9%. This guidance is assessed on a field-by-field basis.

- The Application Risk Management (ARM) System for Western WA focuses on identifying the proper timing of manure/fertilizer application to prevent runoff events through real-time decision tools. The ARM System includes use of a Manure Spreading Advisory (MSA) and Application Risk Management Worksheet to identify proper application timing. Combined, these tools provide a regional (MSA) and field specific (ARM Worksheet) surface runoff risk rating for application to a specific field on a specific day. The two are meant to work in tandem and provide a user with a decision process to help manage manure properly. We would like to see the ARM system presented as an alternative to the 100-foot setback or 35-foot buffer when used in conjunction with the Seasonal Application Setback Distances.

- The following practices or features should be considered as “alternative practices” to the 35 foot buffer and 100 foot setback in the CAFO permit for effectively limiting the movement of runoff from fields: direct injection of manure into the soil (liquid manure), disc/immediate incorporation of manure into the soil (solid or liquid manure), a field that slopes up-gradient to a waterway, a constructed berm along a waterway with no outlet, a water control structure that holds water back from exiting a tile line and/or entering a ditch, and seasonally dry areas (May-September in Western WA) such as swales. Each of these practices works by preventing the transport of manure by moving it into the soil profile and off of the soil surface or physically preventing runoff from entering a waterway.
- Smaller buffers should be permitted when risk to surface water is minimal, examples of which are: When no rain is forecast within 48 hours after application, when physical movement into the ditch is prevented by topography or berm, when application rates are low or precision applied, when manure is incorporated into soil within 24 hours of application, when ditches are dry.
- There needs to be an option to apply manure to the entire field when the ditches are dry or when the weather forecast is clear, otherwise this requirement becomes a huge imposition to the farm.
- Do not use a one-size fits all approach, rather design solutions that protect the environment while giving farmers the use of as much of their acreage for agriculture as possible.
- In May of 2015, we experienced a 100-year storm event, this location (Mabton) had between 1.7" and 2" of rainfall in a single event. In fields with properly constructed berms (from NRCS Part 650 Engineering Handbook), there were no breaches and no discharge from these fields, a remarkable achievement. These berms consume about 6' of land, not 100 feet but are a much better and proven to be more effective tool to prevent run off and insure down gradient water quality.

Ecology Response:

Many buffer options were suggested in the comments, however no data or analysis was provided with those suggestions to show how they could be considered equivalent to the 100-foot setback. Ecology acknowledges the difficulty of providing data supporting equivalency as EPA has not provided a range of estimates for how effective the 100-foot setback’s performance is. Alternatives, if included in the permit are considered effluent limitations that must go through public notice and comment. Because the suggested alternatives were not subject to public and comment, Ecology is not including them in the permit at this time with the exception of berms.

Combined:

Ecology has included a berm option in the combined permit. As an alternative that should completely stop water movement off of a field if appropriately designed, installed, and maintained, it is at least equivalent to the 100-foot application setback in providing pollutant reduction in runoff.

State only:

This permit does not authorize any surface water discharge from land application fields including agricultural stormwater. Therefore any setback or buffer implemented by the Permittee must stop all runoff from their fields.

6. Conduits to surface and groundwaters

- You need to clearly define what this is. Referring to other conduits to surface water.
- Technically, the entire field could be a “conduit to groundwater” if you include soil pore spaces, animal pathways, worm holes, etc. Please be more specific here or in the definition section. Referring to other conduits to groundwater.
- Is an entire field considered a “conduit to groundwater” given that it likely contains features such as soil pore spaces, animal burrows and pathways, worm holes, etc.? In which case, this guidance would restrict all applications at any time.
- Please define what “other conduits” to surface and ground water means. This ambiguity will likely result in conflict between Ecology personnel and the Permittee.
- Ecology should consider defining “other conduits” separately for surface and ground waters as their transport pathways/conduits are different.
- Is a swale that may seasonally contain with water, but is dry for nine months of the year, be deemed a “conduit” such that a 200-foot area around the swale must be sacrificed *year-round* because of the potential for connection to surface water in the winter for 3 months?

Ecology Response:

Combined:

“Other conduits to surface and groundwater” means areas which would allow run-off to bypass setbacks such that the run-off would not be attenuated by the setback. It is not meant to include naturally occurring pathways such as worm holes, soil macro pores, or preferential flow paths in soils. If animal burrows are causing run-off to bypass the setbacks, the Permittee should consider whether the setbacks are being maintained properly. If animal burrows are causing the problem, they should be eliminated as part of setback maintenance.

State Only:

This permit does not allow surface water discharges (e.g. run-off, tile drain lines) from land application fields, so the Permittee must use whatever setbacks or other technologies, infrastructure, or activities necessary to achieve no discharge.

7. Effectiveness of setbacks

- Buffer requirements are inadequate to protect designated uses. A 100-foot setback on bare soil provides no filtering of run-off to trap pollutants. A 35-foot vegetated buffer is not supported by science and will not adequately treat run-off. Neither buffer is sufficient treatment to treat run-off to the standards required by state and federal law.
- Draft permit lacks sufficient justification for buffer zone requirements.
- Setbacks do not specify that vegetation is required between application areas and surfaces waters and conduits to surface water. Without specific vegetation requirements, a 100-foot setback will not perform pollutant removal functions, as bare compacted ground does little to trap, remove, and treat pathogens, sediment, and nutrients. As it currently

stands, the permit would allow farm roads and other compacted and denuded soils, with little or no pollutant removal function, to count in the setback distance.

- Recent science suggests that a minimum of 30 meters of riparian forest is necessary to protect aquatic life. Even at 30 meters, nitrate removal rates are only around 48%, however they can be increased to approximately 90% removal at 100 meters. With respect to sediment, this same study found that there was ecological significance in the sediment trapping observed by increasing buffer width from 10 to 30m.
- One-hundred foot buffer requirements will cause an increase in nitrate loading to surface and ground water as a result of the increased use of synthetic fertilizers (e.g. Urea) which can easily be flushed in small rain events, while the application of manure in the same locations would not pose the same risks.
- Neither a 100-foot setback nor a 35-foot vegetated filter strip meet the requirements of AKART or Clean Water Act standards to protect the designated uses of a stream.
- The scientific literature seems pretty clear that merely setting back pollutant application areas without adequate riparian vegetation will not adequately protect water quality.
- Ecology should provide guidance that can be applied on a site specific basis to determine the characteristics of a required properly functioning riparian zone. As part of this guidance, Ecology should incorporate the results of the recently completed literature review (Ecology Publication No. 16-03-026) that noted that when vegetated buffers and setbacks are used in combination they are more effective than when either approach is used without the other.
- The adoption of the federal CAFO permit options of a 100-foot manure application setback or a 35-foot wide vegetated buffer to protect water bodies may avoid a prolonged discussion regarding the appropriateness of various buffer widths but it is unlikely to ensure that water quality standards are achieved.
- A one-size fits all buffer/setback does not take into account site specific conditions that could reduce this requirement (slope, soil properties).
- There is no basis in the science to suggest that either of the approaches provided by permit are sufficient to treat runoff to the standards required by the permit and state and federal law. Ecology must eliminate the setback requirement and replace it with a buffer requirement supported by the science.
- The "one size fits all" approach is administratively convenient but does not result in properly functioning riparian zones that restore and protect salmon habitat and associated water quality unless buffers are sized large enough to address most pollutant treatment needs.
- Manure application setback distances apply for both liquid and solid manure and should be used year round to help prevent runoff events. Additional static setbacks may be required near wells, fence lines, or other identified areas. When used properly, setbacks can help prevent overland flow of manure caused by precipitation or irrigation water. Good management and proper field conditions must also be observed.
- Ecology publication 92-10 acknowledged that for protecting wetlands, the 100 foot buffer is not required per se, but is used to prevent human intrusion/trespass/damage within the buffer area which would degrade its effectiveness. Preventing human intrusion can be accomplished by fences or posting signs at a much reduced cost compared to the

staggering expense of taking away 100 feet (each side, 200 feet total) from highly productive and valued farmland.

- The permit provides that a Permittee may self-select a compliance alternative to the already meager buffer and setback requirements. A 100-foot set-back will not provide adequate treatment of pollutants or protect designated uses and therefore should not be the standard by which a compliance alternative is judged. This is especially true if the setback were to include farm roads or other bare and compacted soils.
- The draft permit, weakens the most important protection for surface waters, the requirement for riparian barriers.
- These buffer requirements are unscientific and thoughtless. Anyone who has been in fields in western Washington this summer will understand that applying manure even one foot from most ditches this summer would not lead to any pollution. Applications can be made with precision.

Ecology Response:

Combined:

The permit incorporates the default setbacks required by 40 CFR 412.4(c)(5) with the exception of adding berms as an alternative option. See also response to special condition S4.N comment 2.

State Only:

This permit does not allow surface water discharges (run-off and tile drain lines) from land application fields, so the Permittee must use whatever setbacks or other technologies, infrastructure, or activities necessary to achieve no discharge.

8. Agricultural stormwater and buffers

- The permit needs to clearly state that as long as the Permittee is applying nutrients in accordance with their nutrient management plan (NMP) that any runoff events are not a discharge and are treated as exempt agricultural stormwater.
- Ecology should strive for a permit process that allows for certainty and reliability for both Ecology and the Permittees. By clarifying that there are no violations for runoff on land application or management areas, Ecology will ensure that there will be no confusion over these types of situations.

Ecology Response:

Combined:

If a Permittee is in compliance with their permit, has installed, operated, and maintained their land application field setback properly, and is following their nutrient budget, then field run-off is most likely agricultural stormwater. Agricultural stormwater is not, for example, the result of land application during precipitation events large enough to cause field run-off, irrigating a field, or due to equipment failure.

See also response to special condition S1.A comment 3.

State Only:

This permit does not authorize any surface water discharges from land application fields, including agricultural stormwater. Chapter 90.48 RCW does not have any provisions which exclude agricultural stormwater from being required to have a permit.

9. Economics of setbacks

- There are several areas in the state where the 35-foot vegetated buffer or 100-foot setback would reduce available land application acreage by as much as 40%.
- The proposed setback/buffer would inhibit the use of private property and reduce farm productivity. Ecology has not demonstrated that the setback/buffer is tailored to site-specific conditions.
- Significant loss of operational land due to buffer requirements.
- Universal 100 foot buffer requirements create a hardship for several farmers.
- Organic farmers not allowed to utilize synthetic fertilizers resulting in additional loss of operational land due to buffer requirements.

Ecology Response:

See comment responses and updates to the Small Business Economic Impact Statement.

S4.O. Manure Export (Now S4.N in both permits)

Commenters:

<ul style="list-style-type: none"> • Agri Beef Co. • Confederated Bands and Tribes of the Yakama Nation • Dena Jensen • Environmental Engineering Associates • Jim Dyjak • Lummi Indian Business Council 	<ul style="list-style-type: none"> • Lummi Nation • Natural Resource Conservation Service • Thurston County Public Health and Social Services • U.S. Environmental Protection Agency 	<ul style="list-style-type: none"> • Washington State Dairy Federation • Western Environmental Law Center • Whatcom Conservation District
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Range of Comments:

1. Responsibility on site

- Special Condition S4.O of both permits, and Appendix A: Acronyms and Definitions, should clarify that "export includes the transfer of control even when the transfer occurs on the Permittee's facility." This clarification is necessary since the common understanding of "export" is that the goods or commodity is leaving the physical boundary of a site. This clarification needs to be in the body of the permits themselves, not just the Fact Sheet.
- It is EPA' s position that the permittee retains enough control over composting activities taking place on-site, even if performed by a contracted on-site composter, such that the Permittee remains liable for any discharges from that portion of the facility.

Ecology Response:

On-site export complicates responsibility however, in general if a Permittee contracts to have manure composted on their facility (production area), the Permittee retains responsibility for any discharges from their production area where composting is occurring. In addition, the

contracted composted is also responsible for any discharges from the production area where composting is taking place.

Once the Permittee has exported the manure to the composter on-site (export record keeping required), the Permittee would no longer be responsible for records keeping as the composted manure is moved off-site by the composter.

2. Responsibility after export

- This export provision is not aligned with a "cradle to grave" level of accountability that should be associated with manure/nutrient management to ensure that agronomic application rates are not exceeded and manure is not land applied in a manner that results in a discharge of fecal material to waterways. Producers should not be allowed to escape this responsibility by simply transferring manure to a third party.
- In the absence of a manure applicator licensing system, the permittee should remain responsible for the land application of manure generated on its facility even if it is exported. One way to accomplish this level of accountability is to modify Section S4.O and SG.C of the draft permit to require that the permittee obtain from the third party applicator the same record keeping as required of the Permittee in Section S6.B of the draft permit.
- The third party that receives the manure must be required to provide the nutrient budget for the fields where the manure is to be applied (not just the parcel number[s] and acreages where the manure will be applied) to the Permittee to demonstrate that the agronomic rate will not be exceeded. The Permittee that generated the manure must provide this nutrient budget (from the third party) to Ecology as part of the reporting identified in Section S6.C.

Ecology Response:

Ecology does not have authority to require "cradle to grave" responsibility on the part of the Permittee for manure, litter, or process wastewater exported from the facility. It also does not have authority through the permit to require the receiving party to provide anything to the Permittee or use the manure, litter, or process wastewater in a particular fashion.

3. Ecology should clarify that the CAFO that generates the manure is responsible for providing the information needed to determine the agronomic application rate to the third party that receives the manure.

Ecology Response:

Special condition S4.O requires that the Permittee provide the most recent manure, litter, or process wastewater nutrient analysis to the receiving party.

4. The permit strangely mandates the export of manure (permit requires export of manure when the facility generates more than its crop land can use as part of a balanced nutrient budget).

Ecology Response:

For a facility that generates more manure, litter, process wastewater, or other organic by-products than it can accommodate according to its nutrient budgets, there are three options that can be contemplated based on water quality protection. One is exporting the excess nutrients, the next is decreasing herd size, and finally the third is increasing the amount of land application fields.

- Remove the language referencing digesters or more appropriately just reference the Ecology digester guidelines as there are other considerations associated with digestate in this context as well. There is an entire solid waste exemption permit and process to address this parameter.

Ecology Response:

Comment noted. There is a solid waste handling permit exemption in chapter 173-350 WAC if digestate remains within certain quantities and parameters. However, if exporting digestate especially that which includes nutrient sources not generated by the CAFO (e.g. food processor waste), the nutrient content of the digestate is likely to change over time based on the nutrient content of the inputs. Accurate land application requires accurate nutrient analysis. Ecology could not issue a permit that allows export when the nutrient content of the export is not known. Doing so would increase the risk of land application taking place outside of the permit. The testing requirements are based on the sampling and testing requirements included in WAC 173-350-350 Table A so that they line up with the exemption.

- What is an “Unaffiliated party”? Does this paragraph mean that manure couldn’t be exported to a relative’s separate farm which is unaffiliated with the dairy operation?

Ecology Response:

An unaffiliated party is one that does not have a financial interest in the generating CAFO, and is not using any of the facilities at the permitted CAFO, such as using a lagoon to store manure from another CAFO or using land application fields to apply manure from another CAFO.

- The permit should require tracking the amount of manure exported and reporting to Ecology

Ecology Response:

The permits require that the Permittee keep records of how much manure, litter, process wastewater, or other organic by-products are exported. A total amount exported is reported to Ecology on the annual report. If more detailed records are required, Ecology may request the export records from the Permittee.

S4.P. Emergency Procedures (Now S4.O in both permits)

No comments received.

S4.Q. Training (Now S4.P in both permits)

No comments received.

S4.R. Pollution Prevention Plan (Now S4.Q in both permits)

Commenters:

<ul style="list-style-type: none"> King Conservation District King County Department of Natural Resources and Parks Lagerway Dairy 	<ul style="list-style-type: none"> Northwest Indian Fisheries Commission RE Sources for Sustainable Communities 	<ul style="list-style-type: none"> Thurston County Public Health and Social Services Underwood Conservation District
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<ul style="list-style-type: none"> • Mike Gross • N3 Consulting • Natural Resource Conservation Service 	<ul style="list-style-type: none"> • Senator Warnick, 13th Legislative District • South Yakima Conservation District 	<ul style="list-style-type: none"> • Vreugdenhil Farms • Washington Cattlemen’s Association • Whatcom Conservation District
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Range of Comments:

1. Special Condition S4.R.3.b.

- "The maximum number of animals the current infrastructure was designed to house and maintain." should probably read: "The maximum number of animal units the current infrastructure was designed to house and maintain."

Ecology Response:

Ecology is using animal numbers in the permits to align them with how the federal CAFO rules require reporting. If the Permittee wishes to use animal units this is acceptable, however the animal numbers must still be listed.

2. Special Conditions S4.R.3.h.ii.

- Does this include current sludge build-up in bottom? Referring to storage capacity as currently maintained.

Ecology Response:

The storage capacity as designed is the storage capacity based on the design and installation of the lagoon. Sludge on the bottom of a lagoon would reduce the storage capacity of the lagoon, so storage capacity is how much the lagoon will currently contain if it is less than the designed capacity because of sludge.

3. Special Condition S4.R.4.

- The requirement to update an MPPP based on a 10% increase or decrease is arbitrary and Ecology has not provided a reason why the update should be made.
- The reference to a 10% decrease needs to be removed. This may create a substantial burden on producers, as natural functions of the cattle markets often cause owners and operators herd numbers to fluctuate.
- This provision is also ambiguous in terms of what animals this would encompass. An operation could easily exceed 10 percent once they begin calving. Ecology should clarify as to why they believe 10% is significant and the language should be clarified so that it only includes mature animals and excludes calves that have not been weaned.

Ecology Response:

Ecology has removed the requirement to update the MPPP based on animal number changes. Ecology is primarily concerned with the proper management of manure, litter, process wastewater, or other organic by-products on the CAFO, not how many animals are present. If animal numbers change sufficiently that the Permittee must modify the operation (e.g. install additional storage), then the requirement to update the MPPP is triggered.

4. Existing plans and requirements

- Ecology should specify who is qualified to plan or design new and existing CAFO operations (e.g. licensed engineers; other licensed professionals; certified CNMP planners, certification via special training).

- Replacing the discretionary, confidential, and highly variable nutrient management plan measures with more consistent, publically accessible, and concrete requirements and performance standards is an important step in the right direction.
- Manure Pollution Prevention Plans should have the same regulatory requirements as nutrient management plans [in reference to NMP requirements in 40 CFR § 122.42].
- Ecology should examine whether the new requirement to prepare and implement a Manure Pollution Prevention Plan overlaps with the existing requirements for dairy nutrient management plans established in chapter 90.64 RCW. Both plans are designed to prevent the discharge of pollutants, and both plans must be revised when that goal is not being met. The proposed requirement to prepare a MPPP duplicates the current legal framework under which dairies are required to operate and will further add to the cost of compliance attributable to the extensive recordkeeping requirements contained in the permits.
- Dairies are already required under RCW 90.64 to develop a nutrient management plan within 6 months of receiving a milk license. The information in the DNMP is the same as what Ecology is requiring dairies to develop in a MPPP for the permit process. The MPPP is an added burden that is not necessary.
- Ecology should work with the Conservation Districts, who already develop DNMP's, to come up with one plan that can be used work for both the permit and RCW 90.64.
- This is going to force a rewrite of most of the dairy nutrient management plans in the state. There is not enough capacity to do this and it is unnecessary since the DNMP's are examined every two years under State law anyway. Having these on file with Ecology is entirely at odds with the permit premise that all lagoons leak, having data on the lagoons is acceptable, entire plans in an overreach and waste of taxpayer dollars.
- MPPPs should be made publicly available.
- MPPPs should follow the same requirements as NMPs and account for all pollution sources.
- Use the Dairy Nutrient management plan (90.64) as the standard and request updates where necessary.

Ecology Response:

Ecology is not requiring a specific person or qualification to develop a MPPP because the MPPP is simply documentation of the activities taking place on the CAFO in order to meet permit requirements. It is also a subset of the information in a dairy nutrient management plan (chapter 90.64 RCW) which is focused on pollution prevention while the dairy nutrient management plan is a holistic look at all aspects of an operation. Also by requiring a MPPP, there is a clear separation of plans which reduces the business related (instead of pollution prevention related which is what the MPPP requires) information that public requests may inadvertently obtain if just dairy nutrient management plans were used.

Industry representatives and producers have told Ecology that all dairies have dairy nutrient management plans as required by chapter 90.64 RCW and that they are being followed. Ecology expects that with this as the current landscape that producers could develop their own MPPPs (if they wish) by copying and pasting the pertinent sections of their dairy nutrient management plan into a MPPP. Certainly conservation district staff or consultants could be used to document activities by the Permittee as well.

5. Additional information that should be included in MPPPs
 - The location of all known drain tiles should be mapped.
 - All known information about groundwater wells should be included. If the well has a tag or ID number, it must be identified.
 - The MPPP for each facility should include more information than is specified on pages 29-31 of the draft permit.
 - Instead of requiring a one-time lagoon report, the MPPP should include technical details specific to how each operation will prevent and monitor pollution (such as by installing groundwater monitoring wells and lined lagoons).

Ecology Response:

Special condition S4.R.2.b.iv requires mapping of tile drain outlets.

Ecology has added that the well tag or ID number must be included.

See also responses to special condition S1 comment 8, S2.A comment 7, S4.B comment 2 and S5 comment 1.

6. Occasionally modifications occur on projects during construction, and it is unclear how designers would go about implementing important changes and meet requirements of the permit in short order when this occurs. A clear process should be described when construction of facilities are changed due to unforeseen site conditions or circumstances.

Ecology Response:

Ecology has clarified that the MPPP must be updated within 30 days unless otherwise specified.

7. In Whatcom and Yakima Counties there are portions of each county where groundwater contains elevated levels of nitrate. In these areas, the MPPP should include locations where producers will install groundwater monitoring wells and/or synthetic liners for lagoons. We understand that in some cases, these facilities will be phased in and not installed immediately. In some areas, where no pollution associated with CAFOs has been documented, it may be appropriate that the MPPP not include installation of groundwater monitoring wells or synthetic liners for lagoons.

Ecology Response:

See responses to special condition S1 comment 8, S2.A comment 7, S4.B comment 2 and S5 comment 1.

8. Ecology should review and approve updates to MPPPs as required by the federal rules

Ecology Response:

Under Federal CAFO rules, Permittees write their own nutrient management plans which eventually contain enforceable effluent limitations. Ecology is implementing the federal CAFO rules under a model where the permit contains these effluent limitations instead of in the NMP. Therefore, the MPPP's do not need to be reviewed and approved because they do not contain effluent limitations.

See special condition S1.A comment 3 and S2.A comment 10.

S5. MONITORING

Commenters:

<ul style="list-style-type: none"> • Abdirahman Mohamed • Amelia Marchand • Art & Theresa Mensonides • Arvia Morris • Barb Drake • Barbara Gustafson • Bar-E Dairy • Baumgardner Dairy • Bel-Lyn Farms • Bill • Caleb Laieski • Carol Follett • Center for Environmental Law and Policy • Center for Food Safety • Center for Food Safety • Chris Bevers • Chris Wooten • Citizens for a Health Bay • Colleen Gray • Confederated Bands and Tribes of the Yakama Nation • CROPP Cooperative, Organic Valley, Organic Prairie • Cynthia Cannon • Daveen Jones • David Asher • David Friscia • David Powell • David Van Cleve • Dean & Martha Effler • Dena Jensen • Diane Tilstra • Dr. Paul Lindholdt • Environmental Engineering Associates • F.A. Farm • Form email with Subject Line: Improve the CAFO Permit Rule to Protect Water Quality • Form email with Subject Line: Please Protect Drinking Water From Factory Farm Pollution • Form Email with Subject Line: Please protect our drinking water from harmful manure pollution 	<ul style="list-style-type: none"> • Hayley Mathews • Hillview Dairy • James Tuck • Jane Beattie • Jason Darling • Jason Sheehan • Jason Vanderkooy • Jeannette Folkertsma • Jeremy Visser • Jim Dyjak • Jim Hansen • Jim Leuba • Jo Ann Herbert • Joan Vande Hoef • Joel Green • John Roskelley • Jon Vanderkooy • Judy Hopkinson • Kate Packard • Kathleen Schormann • Kerry Peterson • King County Department of Natural Resources and Parks • King County Department of Natural Resources and Parks • Kirsten Fitterer • Krainick Dairy, LLC • Landau Associates • Larry Fendell • Larry Stap • Leah Brady • Lenssen Dairy • Leo Butzel • Lovel Pratt • Lummi Nation • Lynne Pendleton • Lynne Penndleton • Lynne Shamay • M. Gallus • Margie Van Cleve • Mark Cole • Markus Rollinger • Marlene White • Martin Kimeldorf • Martin Kimeldorf • Marvin Hoekema • Maude Laslie • Max Perry • Michael Craven 	<ul style="list-style-type: none"> • Morgan Hepfer • N3 Consulting • Nancy Chapa • Natural Resource Conservation Service • Northwest Indian Fisheries Commission • OneAmerica • Pam Borso • Patsy Tyvand • Paula Rotondi • Peter Holcomb • Postma Dairy • Raven's Eye Consulting • Rev. Ken Jones • Rich & Ann Appel • Richard Badalamente • Rod Vande Hoef • Ronna Loerch • Rose Lagerberg • Ross Marquardt • Ru-Ben Dairy • Ruth Siebring • Sandy Braden • Sandy Robson • Senator Warnick, 13th Legislative District • Sidney, Cornelius, & Aaron DeBoer • Sierra Club • Sierra Club • Simplot Land & Livestock • Siobhan Ring • Soiltest Farm Consultants, Inc • Soiltest Farm Consultants, Inc • Sophia Ressler • Spokane Riverkeeper • Steve Groen • Susan Johnson • Tony Veiga • Vladimir Shakov • Washington Environmental Council • Washington Farm Bureau • Washington League of United Latin American Citizens • Washington State Department of Fish and Wildlife Region 3
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<ul style="list-style-type: none"> • Form email with Subject Line: Please support stronger CAFO rules • Friends of Toppenish Creek • Gary Davis • Gayle Janzen • Hank Kastner • Harold Wershow 	<ul style="list-style-type: none"> • Michael Sennett • Mike Bennett & Susan Ward • Mike Schoneveld • Mindy Roberts • Monte Hokanson 	<ul style="list-style-type: none"> • Washington State Department of Transportation • Wesen Farms, Inc • Western Environmental Law Center • Whatcom Conservation District
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Range of Comments:

1. Groundwater monitoring

- According to Department of Ecology reports from 2012, 2014, and 2016, groundwater monitoring at the water table is the only way to determine the amount of nitrates reaching the water table. Groundwater monitoring is essential because it is the only feedback mechanism that will inform farmers and regulatory agencies about whether their operational practices are effectively reducing and preventing nitrate pollution in groundwater. We propose that groundwater monitoring be added as a phased-in requirement for large CAFOs.
- The permit must include groundwater and surface water monitoring requirements. Other CAFO permits require groundwater monitoring.
- Ecology’s own scientists recommend GW monitoring
- Without groundwater sampling, it is impossible to know whether CAFOs are in compliance with the law.
- The only way to scientifically evaluate impact on groundwater is through groundwater monitoring.
- Soil sampling is not an adequate surrogate for groundwater monitoring or a reliable predictor of nitrate concentrations in groundwater.
- Groundwater monitoring should be required when the water table is within 3 feet for the land surface.
- Groundwater monitoring should be required where the risks to people and water quality are highest.
- Ecology should rely on the scientific literature, including conclusions drawn by their own scientists, and require ground water sampling and reporting to prove that the agronomic application rates of a management unit are not being exceeded by a particular producer.
- If Ecology does not require groundwater monitoring, it will not be able to make the case that a CAFO is contributing to groundwater quality impacts from soil samples and land application records alone.
- The proposed soil testing is inadequate for the purpose of protecting waters of the state
- The permit should not contain groundwater monitoring around lagoons or land application fields. It is a significant expense that has limited benefits.
- Groundwater monitoring would provide little added benefit as a feedback mechanism for changing management practices due to the difficulty of sampling and differences in interpretation of analysis results.
- Soil sampling is not an adequate surrogate for groundwater monitoring or a reliable predictor of nitrate concentrations in groundwater.

- Soil testing does not accurately depict pollutant loading to ground water, and therefore ground water monitoring needs to be required.
- Some metric is needed to track how effective nutrient and adaptive management are on the landscape. Since nitrate impacts on groundwater are an area wide problem, groundwater monitoring on a regional basis (see California program) that is evaluated on a permit-cycle basis is appropriate for determining adaptive management efforts.
- Surface water monitoring is a major component of many permits which provides a feedback mechanism for adaptive management by the Permittee. A similar feedback mechanism for groundwater would be difficult to realize for CAFO Permittees due the lag time from land application to groundwater impact. Consequently, in many instances it will be difficult to relate current monitoring well water quality results to current practices on individual fields.
- Require monitoring wells to test groundwater for nitrates.
- Soil testing should mirror current testing requirements and recommendations used by WSDA.
- Require surface and ground water monitoring down gradient of medium and large CAFO operations.
- Require ground water monitoring where the ground water table is within three feet of the land surface and where risks are highest to human health and water quality.
- Groundwater monitoring has no merit unless all point sources are monitored equally.
- Require mandatory and frequent groundwater and surface water monitoring.

Ecology Response:

Soil monitoring can indicate when groundwater may be at risk (e.g. when residual soil nitrate levels are elevated), even though it is not a direct measurement of groundwater content. However, soil monitoring is very effective for manure management because it provides a more consistent and timely feedback loop for modifying activities taking place on a field.

Groundwater monitoring is an effective way of measuring impacts to groundwater quality. However, there is a lag time between actions that happen at the land surface and impacts to groundwater quality. So groundwater monitoring does not always provide immediate feedback on recent management practices. Soil monitoring is very effective for timely feedback which is helpful for manure management. However, soil monitoring has its limitations in that it can indicate when groundwater may be at risk (e.g. when residual soil nitrate levels are elevated) but it cannot provide assurance that groundwater quality is protected.

Due to the need for a quicker feedback loop for adaptively managing land application of manure, litter, process wastewater, and other organic by-products, Ecology is not requiring groundwater monitoring as a blanket requirement in the permits. However, there are some instances where groundwater monitoring may be required. First, through adaptive management, if a Permittee is failing to reduce fall soil nitrate levels in the very high trends category. In this case, the Permittee has the option to monitor groundwater to show that they are not impacting groundwater. The second instance is if after completing the lagoon assessment it is determined that there is not two feet of separation between the bottom of the lagoon liner and groundwater (including seasonally high groundwater tables). If there is not

two feet of separation, the Permittee must monitor groundwater (special condition S5.D) to determine the impact the lagoon has had on groundwater through seepage.

If a Permittee has a trend of not reducing field nutrient levels based on fall soil sample analysis, Ecology has other tools external to the permit available that can be used to address compliance, and potentially require groundwater monitoring. For example, administrative orders and penalties. Through the use of these tools, groundwater monitoring could be required.

See also responses to special condition S2.A comments 1 and 7

2. Monitoring activities and parameters

- The permit should require monitoring for hormones and pharmaceuticals.
- The permit does not contain monitoring that is adequate to evaluate compliance with all applicable standards.
- Sub root soil sampling requirement is excessive.
- Require fecal coliform testing along all waterways draining into rivers that tribute to the Puget Sound.
- Do not allow self-monitoring, the Department of Ecology must take the lead for monitoring activities.
- Require baseline soil and water testing.
- Closely monitor existing operations.
- Submittal deadlines for reporting do not adhere to actual timeframes of agricultural practices.

Ecology Response:

Comments noted. The monitoring required by Ecology is focused on ensuring permit compliance and developing nutrient budgets. Self-monitoring and reporting are standard permit requirements.

See also responses to special condition S4. H and S4.I comments.

3. Clarifications

- Why is this sentence even in here? Please remove. Not necessary or relevant. Referring to “The amount of manure, litter, and process wastewater generated and the amounts land applied do not need to be analyzed by an accredited laboratory”.
- Please clarify the statement “1.The date, which land application field or lagoon, and time of sampling.”

Ecology Response:

Ecology agrees and has removed the sentence. Ecology has further clarified what data is required to be recorded for special conditions S3.1-5.

4. Economic burden of monitoring

- Soil sampling twice per year is an unnecessary cost burden on farmers.
- Regulatory burden of additional soil testing requirements.

- Record keeping requirements will require an additional full time employee to manage, not factored into the Small Business Economic Impact Analysis.
- Costs associated with recording and reporting requirements for MPPP is too high.
- Burdensome employee time requirements for inspections and filing out reporting requirements.

Ecology Response:

See response to the comments in the section titled: Comments on the Small Business Economic Impact Statement.

5. MPPP

- Require MPPP to be approved by all affected parties prior to issuing permit coverage, rather than six months after the permit is issued.
- MPPP is an unnecessary duplication of existing WSDA regulations.
- Examine whether MPPP requirement overlaps with existing requirements for dairy nutrient management plans established in RCW 90.64.
- Current adherence to nutrient management plan requirements is sufficient.
- Work with farmers to acquire the necessary data to support the need for the permit prior to passing strict blanket regulations.
- Utilize established protocols to maintain continuity in data collected and reported (note, Yakima Valley Dairy Management Plans).

Ecology Response:

The conditions contained in the general permit are enforceable. What the MPPP contains an explanation of how the Permittee is meeting permit conditions at their facility. Therefore the MPPPs are not approved by Ecology. Also, this means that MPPPs should be compatible with existing dairy nutrient management plans required by chapter 90.64 RCW. For a Permittee with a well written and implemented dairy nutrient management plan, much of the information asked for by the MPPP is already available to the Permittee and creation of a MPPP should be largely cut and paste of the pertinent information from the dairy nutrient management plan to the MPPP.

6. Many of the records required by the draft permit are considered confidential by producers and should not be available for public access.

Ecology Response:

The information required is typical information required for other permitted activities. See response to special condition S6.D comment 3 and fact sheet discussion on page 28.

7. Lower Yakima Valley needs specific enforceable regulations regarding ground water requiring regular ground water and surface water testing.

Ecology Response:

See response to General Comments on the Draft CAFO permits comment 12 and Comments on Environmental Justice.

8. TMDLs must assign waste load allocations to all permitted point sources and load allocations to all nonpoint sources of pollution.

Ecology Response:

Comment noted. See response to special condition S3 comment 3.

S5.A Operations and Maintenance

Commenters:

Natural Resource Conservation Service

Range of Comments:

1. Reference is made to the “Oregon Department of Agriculture CAFO Record Keeping Calendar”. There are four such calendars. Please specify which one is the correct one to use.

Ecology Response:

Ecology has clarified that it is the most recent Large CAFO Record Keeping Calendar available from Oregon Department of Agriculture that is being referenced.

S5.B Manure, Litter, Process Wastewater

Commenters:

<ul style="list-style-type: none"> • Dr. Joe Harrison, WSU Puyallup Extension • N3 Consulting 	<ul style="list-style-type: none"> • Soiltest Farm Consultants, Inc • Washington State Dairy Federation 	<ul style="list-style-type: none"> • Whatcom Conservation District
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Range of Comments:

1. Analysis parameters
 - Nitrate + Nitrite as N: This is likely unnecessary as there is little to no nitrate in manure. It is okay to be curious and see, but please allow a producer to remove this analysis if the results are consistently below +/-3 ppm.
 - Organic Nitrogen: Most manure is analyzed for Total N, not Organic N. Total N is used for nutrient budgets and determining how much manure to apply based on agronomic needs.
 - The conversion from Ammonia to nitrate only begins to happen at a significant rate once the ammonium enters the soil and is oxidized by bacteria.
 - Manure contains negligible amounts of nitrate-N. Therefore it is of no practical value for obtaining an analysis.

Ecology Response:

See response to special condition S4.I comment 1 and 4.

2. Analysis methods

- Using the correct lab methods for both extraction and analysis of nutrient levels is essential to get useable information.
- The sample analysis methods specified in the permit are not appropriate for nutrient analysis as they are methods for wastewater analysis, not manure analysis. This will add extra cost because samples will have to analyzed twice.
- Allow the use of North American Proficiency Testing Program (NAPT) certified labs, not just those certified under Chapter 173-50 WAC. (<http://www.naptprogram.org/>)
- The methods used in order to gain certification under the Minnesota Dept of Ag certification program is the one which has proven to be most reliable. <http://www2.mda.state.mn.us/webapp/lis/manurelabs.jsp>

- Methods listed are for wastewater. Soil manure may require different methods. Please list appropriate standards by media.

Ecology Response:

Soil and manure sampling and analysis results are part of the reporting of effluent limitations for the CAFO permits. Monitoring requirements for reporting effluent data are set by state and federal rules.

WAC 173-226-090 applies to both combined and state only permits. WAC 173-226-090(4) requires that a laboratory accredited under chapter 173-50 WAC be used to prepare data submitted for permit requirements except for certain parameters (except in some cases where the laboratory is already accredited and then it must be accredited for these parameters). These parameters are flow, temperature, settleable solids, conductivity, pH, turbidity, and internal process control parameters. Therefore, for the parameters being required for monitoring as part of both CAFO permits, a laboratory accredited under chapter 173-50 must be used.

According to communication with WSDA, it has been WSDA’s standing policy to require dairies to use of laboratories accredited by Ecology (chapter 173-50 WAC) for sample analysis. Requiring the use of chapter 173-50 WAC accredited laboratories should not be a change for permitted dairies.

Combined:

In addition to the requirements of WAC 173-226-090, because the combined permit includes NPDES requirements, 40 CFR § 136 applies to monitoring required by the combined permit. 40 CFR § 136(a) requires the use of EPA approved methods (those included in Part 136 by EPA) for analysis of effluent the data from which will be reported as a permit requirement. However, because Part 136 methods are not appropriate for manure and litter, Ecology has removed the requirement to use these methods. Analysis by labs accredited by Ecology is still required.

S5.C Soil

Commenters:

<ul style="list-style-type: none"> • Dr. Joe Harrison, WSU Puyallup Extension • King County Department of Natural Resources and Parks • N3 Consulting 	<ul style="list-style-type: none"> • Northwest Indian Fisheries Commission • Soiltest Farm Consultants, Inc • Washington State Dairy Federation 	<ul style="list-style-type: none"> • Washington State Department of Agriculture • Whatcom Conservation District
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Range of Comments:

1. Spring soil samples

- In western Washington (a high precipitation area), soil sampling on CAFOs is generally done in the fall, in order to measure residual nutrients. By spring, winter rains have often either leached or denitrified any extra nutrients. This means spring soil test results are inconclusive and therefore not effective for nutrient management.

- Spring soil samples are meaningless for nitrogen budgeting in the Western side of the state. Coming out of the winter the soils are devoid of available nitrogen (our tests on many Westside dairy farm soils in the spring have shown that nitrate and ammonium levels combined are consistently lower than 30lbs of N per acre).
- Spring soil tests on the western side of the state are always low. To require them and then say that if they are low for a few years perhaps you'll allow exemptions is ludicrous.
- Requiring spring and fall samples in low rainfall areas is a penalty, there is no sensible reason why, on the 95% of fields with lower than 45ppm soil nitrate levels, that sampling twice per year is necessary. Suggested changing the requirement so that spring and fall tests are required only where nitrate levels in the top foot exceed 45ppm.
- In Western Washington there is little value to having a spring soil test for nitrate-nitrogen as it has been washed out of the root zone due to rainfall over the winter:
 - DOE Publication No. 14-03-001 March 2014 – Nitrogen Dynamics at a Manured Grass Field Overlying the Sumas-Blaine Aquifer in Whatcom County
 - Saunders et al. 2012. International Journal of Agronomy. Volume 2012, Article ID 101074, 10 pages, doi:10.1155/2012/101074. Comparison of Raw Dairy Manure Slurry and Anaerobically Digested Slurry as N Sources for Grass Forage Production.
- WSDA requirements under 90.64 are for spring samples in the east but fall samples in the west.

Ecology Response:

See response to special condition S4.I comment 1 and General Comments on the Draft CAFO Permits comment 3.

Literature indicates that 45 ppm soil nitrate is very high. Recommended targets by numerous researchers indicate between 5 ppm to 30 ppm is the acceptable soil nitrate range. (Sullivan and Cogger, 2003; Sullivan and Cogger, 2002; Bary et al., 2000; Ecology, 2000; Kratochvil and Steinhilber, 2013; Kowalenko et al., 2007; Drury et al., 2005; Staven et al., 2003; Iowa State University, 1997; Laboski, 2008; Cornell University, 2012; Camberato et al., 2013; Heckman, 2003; Hart et al., 2009). See the Manure and Groundwater Literature Review for further details.

2. Laboratory accreditation

- It is essential that if you are going to specify methods, that they be the correct ones to give meaningful results. The methods listed in tables 7 and 8 are determination methods NOT extraction methods. There are huge differences in the results dependent on the extraction methods, no more so than in Phosphorus where the differences in Total P and extractable P can be 10 fold. Suggested change: instead of listing specific methods require analysis to follow the Western States Standard Methods for Soil and Plants: <http://www.naptprogram.org/files/napt/western-states-method-manual-2005.pdf>.
- Ecology should use NAPT (North American Proficiency Testing Program) certified labs for soil sample analysis. Environmental laboratories certified according to Chapter 173-50 WAC are not certified to provide the necessary soil sample analysis to interpret in reference to WSU and OSU guidance. (<http://www.naptprogram.org/>)

Ecology Response:

See response to special condition S5.B comment 2.

3. Soil sample analysis parameters and units
 - Tests should be for soil organic matter (O.M.), not “organic nitrogen as N.”
 - Total Organic Nitrogen is not routinely analyzed and not routinely used for agronomic purposes, no data is available in fertilizer guides to suggest how to use a Total Organic Nitrogen value if it were available.
 - This section requires reporting units in lbs/Acre. Dairy Nutrient Management Act compliance path associated with soil nitrate levels is tied to parts per million. We suggest requiring reporting in both lbs/Acre and ppm.
 - Table 7 and 8: All methods listed are for water, not soil.
 - Table 7 and 8: Should this be Organic Matter? Referring to Organic Nitrogen as N, if so use % not #/acre
 - Table 8: Allow for units in ppm or lbs/acre.
 - Measurement of Organic Nitrogen will provide no information from which to manage the nitrogen in soil. Organic nitrogen would be in the thousands of pounds of nitrogen per acre, the available fraction of nitrogen is inorganic, primarily nitrate-nitrogen that the crops uptakes.

Ecology Response:

Ecology has changed the requirement to allow reporting in ppm in addition to lbs/acre. Unless otherwise specified for a specific field or management unit, Ecology will use a conversion factor of 3.65 to convert from ppm to lbs/acre. The conversion of ranges from ppm to lbs/Acre is based on an average conversion factor of 3.65 which is from: Marx, E.S., Hart, J., Stevens, R.G. (1999). *Soil Test Interpretation Guide*, Table 13. Oregon State University Extension. Pub No EC 1478.

Comments on the preliminary draft CAFO permit indicated that producers preferred to use Total N for budgeting and land application purposes. Total Nitrogen is the result of three analyses: Organic Nitrogen, Ammonia/Ammonium, and Nitrate/Nitrite. The test for Organic Nitrogen as N was included as a test parameter in order to provide nitrogen data in a form that producers indicated they wanted (Total Nitrogen = Organic N + Ammonia/Ammonium N + Nitrate/Nitrite N). Ecology has changed the parameters that samples are required to be analyzed for.

Part 136 methods are not appropriate for soil samples so Ecology has removed the requirement to use these methods. Analysis by labs accredited by Ecology is still required.

See also response to special condition S4.I comments 1 and 4, and S5.B comment 2.

4. Why has Ecology chosen to use soil sampling as the method of compliance monitoring in the permit? Ecology acknowledges that soil samples are not reliable and monitoring groundwater is the only way to determine what the actual impact to groundwater is.

Ecology Response:

Soil sampling is used as a benchmark to modify activities taking place. It is not used as a compliance limit as suggested in the comment. Benchmarks are not enforceable limits, they are triggers to take actions.

See response to special condition S5 comment 1.

5. It may be helpful for the public to have an additional explanation of why there is a difference in the depths required for soil testing between areas with ≤ 25 inches of precipitation and areas with > 25 inches of precipitation.

Ecology Response:

Generally, in areas with more than 25 inches of rain annually, much of the nitrate that is left in the soils in the fall after harvest, and the nitrate mineralized over the winter poses a risk of leaching to groundwater. This risk, in addition to the shallower rooting depth of the crops grown in these areas means that to minimize leaching and causing a discharge to groundwater, the amount of nitrogen left in the soil at a shallower depth must be minimized. Soil monitoring at the one foot depth supports this goal.

For areas with ≤ 25 inches rainfall annually the amount of leaching can be controlled to a greater extent through management of irrigation water. This allows management to a deeper rooting depth of 2 feet. In order to trigger adaptive management accounting for this greater rooting depth two soil nutrient analysis are required, one for the first foot and one for the second foot are required.

See also the draft permit fact sheet discussion of special condition S4.K and L Adaptive Management starting on page 55.

S6. RECORD KEEPING

Commenters:

Monte Hokanson

Range of Comments:

1. Could Ecology provide a website for Permittees to use for record keeping?

Ecology Response:

In the future there may be potential for online record keeping systems to be developed, but currently Ecology does not have the capacity to develop such an application.

S6.A Operations and Maintenance

Commenters:

Underwood Conservation District

Range of Comments:

1. Remove the requirement for visual inspections

Ecology Response:

Visual inspections are required by 40 CFR § 412.37. Because both the state only and combined permits cover the same activity and visual inspections are a method of insuring that potential problems with manure handling systems are identified early, visual inspections requirements are the same in both permits.

S6.B Land Application

Commenters:

Washington Department of Agriculture

Range of Comments:

1. Units

- Recommend including the option of pounds per acre in addition to units listed.
- Commercial fertilizer is generally applied in pounds per acre.

Ecology Response:

Ecology has added the option for record keeping in lbs/acre for commercial/chemical fertilizer.

2. Special Condition S6.B.1.e – Recommend adding contribution from organic matter.

Ecology Response:

Ecology has added this requirement as percent organic matter.

3. Special Condition S6.B.2 provides very little guidance. There is no indication of where these records should be noted or filed and to whom the Permittee submits these recorded reasons for exceeding nitrogen levels. Adaptive management actions may be needed to avoid high soil test results in the future and should be included.

Ecology Response:

Records that are required by the permits but not required to be submitted to Ecology must be kept on-site by the Permittee so that they are available during permit inspections and available if Ecology requests the records.

4. Permit requirements will require different soil sampling strategies than dairies currently meet under WAC 16-611.020

RCW 90.64 through WAC 16-611.020	Draft CAFO permit S6.B
Field Identification/ Year of applications	b. The field to which the source(s) of nutrients were applied
Crop grown	Included in annual nutrient management budget
Crop nutrient need based on expected yield	Included in annual nutrient management budget
N sources from residual soil nitrogen including contributions from soil organic matter, previous legume crop and previous organic nutrients applied	Included in annual nutrient management budget
Dates of applications, method of application, nutrient sources and analysis, amount of N and P applied and available for each source	Dates of manure, litter, process waste water or other source of nutrient were applied to each field Method of application Amount of nutrients applied in gallons, tons or ft ³

Total amount of N and P applied to each field each year	The total nitrogen applied in the form of ammonia/ammonium and nitrate Total phosphorus applied
Weather conditions 24-hours prior to and at time of application	Weather 24 hours before land application Weather during land application Weather 24 hours after land application

Ecology Response:

As much as possible Ecology has tried to make record keeping requirements as similar as possible to existing chapter 90.64 RCW requirements. However, federal CAFO rules have record keeping requirements that Ecology is required to implement in the combined permit. Because the state only permit covers the exact same activities, Ecology has required the same record keeping. This provides continuity between the two permits and if a Permittee is required to move from the state only permit to the combined permit, they will already be familiar with the record keeping requirements.

5. Irrigation Water Management records

RCW 90.64 through WAC 16-611.020	Draft CAFO permit S6.B.j
Field identification	Field identification
Total amount of irrigation water applied to each field each year	Irrigation water used, providing units

Ecology Response:

Comment noted, these appear to be the same requirements, stated differently. Ecology has changed the language to match that required by chapter 90.64 RCW.

6. The permittee should be required to provide the land application records identified in Special Condition S6.B to Ecology for all land applications of manure generated on their facility regardless if the application is made by the permittee or by a third party applicator.

Ecology Response:

Records required to be kept by the permits are available to Ecology regardless of who is the applicator.

S6.C Export

Commenters:

<ul style="list-style-type: none"> • N3 Consulting • RE Sources for Sustainable Communities 	<ul style="list-style-type: none"> • Washington Cattlemen’s Association • Washington State Dairy Federation 	<ul style="list-style-type: none"> • Washington State Department of Agriculture
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Range of Comments:

1. Parcel numbers

- Please change to address of recipient entity. Parcel number is not used by most people.
- Why is there a need to report acreage data?
- Parcel level detail is not readily available as manure is exported. Often manure goes to temporary storage before application so parcel number is not known.

- Acreage is also often unknown until calculations are made for agronomic application based on manure and soil tests and quantities of manure available to the importer.

Ecology Response:

Ecology is no longer including the requirement to include parcel numbers in the information required to be recorded by Permittees for export.

2. Differences between RCW 90.64 and the draft for Manure Transfer.

RCW 90.64 through WAC 16-611.020	Draft CAFO permit S6.C Export
Date of manure transfer (export/import)	4. Date export took place
Amount of manure transferred	Amount of manure exported
The name of the person supplying and receiving the nutrients	Name of entity manure was exported to
Nutrient analysis of manure transferred	
	Assessor’s parcel number and acreage of fields where being applied unless exported to manure broker

Ecology Response:

The permits do require that a nutrient analysis be provided to the party to which manure was exported. See also Special Condition S6.C comment 1.

3. Over the last 9 years, we have documented at least 50 instances of risky manure applications (submitted to ERTS). We believe most of these applications were caused by off-farm manure export.

Ecology Response:

Comment noted.

4. Ecology should include the following: Each time manure is exported off-farm, a manure tracking manifest must be filled out. At a minimum, it will include the name and address of the recipient, a certification statement that the acceptor is responsible for the potential or realized pollution arising from the manure, the owner of the field where it will be applied, and the parcel number and address of the field where it will be applied. In addition, the owner/operator of the field where it will be applied must be in receipt of the most current representative information on the nutrient content of the manure, bedding and/or process water that is being accepted. These records must be maintained on site for 5 years and submitted as part of each facility's annual report.

Ecology Response:

Comment noted. Ecology does not have the authority to require cradle to grave responsibility and tracking of manure, litter, and process wastewater generated by a CAFO that is exported off site. Much of the information requested by the comment to be recorded is required already.

S6.D Public Access to Permit Records Including MPPP

Commenters:

<ul style="list-style-type: none"> • Agri Beef Co. • American Farmland Trust 	<ul style="list-style-type: none"> • King County Department of Natural Resources and Parks 	<ul style="list-style-type: none"> • Washington Cattlemen’s Association
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<ul style="list-style-type: none"> • Dennis Michelson • Hank Kastner • King Conservation District 	<ul style="list-style-type: none"> • Lagerway Dairy • Paradise Jerseys • South Yakima Conservation District 	<ul style="list-style-type: none"> • Washington State Dairy Federation
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Range of Comments:

1. Information required by permits
 - Ecology needs to limit the information collected to essential information.
 - The records required, retained, and made available for public access must be reduced.
 - The two proposed general permits, as revised, still require unprecedented collection and disclosure of business sensitive information well beyond the needs of the regulatory program.

Ecology Response:

Ecology collects information for permitting purposes because 1) it is required by a regulation, rule, or statute, 2) it is necessary to determine permit compliance, 3) to determine the extent of potential impacts to water quality, or 4) it is necessary to determine compliance with water quality standards.

2. Disclosure of facility information
 - Ecology should clarify if Permittees are required to release exact numbers. RCW 90.64 allows the disclosed information to be released in ranges.
 - Ecology should clarify if Permittees are required to release exact numbers. RCW 90.64 allows the disclosed information to be released in ranges. Language should be added to clarify that the disclosure need only be released in ranges as opposed to exact numbers. It would be extremely difficult providing an exact number of animals at any given moment, especially at larger operations.
 - Ecology needs work with the industry and the Legislature to obtain public disclosure exemptions by statute for commercially sensitive agricultural and livestock information, similar to the exemptions obtained in support of other State agency programs that require disclosure of sensitive information.
 - Has the language on this topic in the draft permit gone farther than federal law allows with regard to the combined permit disclosure requirements?
 - The language in the draft state permit regarding farmer disclosure of information seems to conflict with RCW 42.56.610.
 - Will Ecology notify the Permittee before records are released?

Ecology Response:

Ecology is not pursuing rulemaking related to public disclosure and does not notify Permittees before records are released unless Ecology is requesting records from a Permittee.

RCW 42.56.610 and RCW 90.64.190 require that for dairies, AFOs, and CAFOs **not required to apply for a NPDES permit**, certain information be released to the public only in ranges of: (1) number of animals; (2) volume of livestock nutrients generated; (3) number of acres covered by the plan or used for land application of livestock nutrients; (4) livestock nutrients transferred to other persons; and (5) crop yields. The ranges in which the information is to be released are listed in WAC 16-06-210(29).

Combined:

For the combined permit, because it is a NPDES and state waste discharge permit, all information required by the permit will be released if requested by the public as the actual numbers.

State Only:

As this is not a NPDES permits, the information required to be released in ranges will be released in ranges in response to a Public Records Act request under chapter 42.56 RCW.

3. Confidential business information

- Permittees are required to keep sensitive records on transactions with customers and contractors, maps and plans of sensitive facilities, and identification of points of vulnerability. The Washington Legislature has always been sensitive to the protection from public disclosure of sensitive information on agriculture and livestock. For instance, RCW 42.56.380 exempts from public disclosure all business related information submitted to the Washington Department of Agriculture under RCW 15.86.110.

Ecology Response:

The permits do not collect information that falls under the requirements for RCW 42.56.380. RCW 43.21A.160 provides for confidential business information requests for information submitted to Ecology. Generally, Ecology does not consider information required by a permit to be confidential business information. The requesting party would need to show that the information is related to a process of production unique to the producer for any required permit information to be considered as confidential business information.

See also response to special condition S6.D comment 2.

Combined:

For NPDES permits 40 CFR § 2.302(e) states that information that is water quality effluent data is not eligible or confidential treatment. 40 CFR § 2.302(a)(2)(i) defines effluent data. In brief, effluent data is information necessary to determine the identity, amount, frequency, concentration, temperature, or other characteristics related to water quality of any pollutant which is discharged or authorized for discharge. The information required to be submitted by the combined permit is effluent data related to a conditionally authorized discharge.

4. Timing of record production

- Under Section S6.D all permit records- not just the MPPP- would be made available to the public on short notice, 14 days. This is excessive, not workable given how extensive a request could be framed.

Ecology Response:

The permit requires that the Permittee maintain their records so that they are available upon request by Ecology. Fourteen days is used as a timeframe in general permits to provide a reasonableness factor to requests for permit records.

5. Responsibility for providing records

- The “Public Records Act” was enacted to provide people with access to “public records” information regarding the activities of the government. I don’t believe that the PRA was

meant for citizens to request “public records” from private parties. Each governmental agency should be handling those requests. Please explain why DOE thought that this was appropriate?

- We strongly object to the idea that farmers would have to provide documents pursuant to a public records request. The burden of fulfilling a public records request should not reside with the farmer but instead with the government agency. The permit language needs to be changed to ensure that agencies handle those requests and not farmers.
- There is no provision that protects a producer from harassment.
- Ecology should bear the cost of providing public records.

Ecology Response:

Ecology has removed this permit requirement.

S6.E Records Retention

No comments received.

S7. REPORTS

Commenters:

• Confederated Bands and Tribes of the Yakama Nation	• King County Department of Natural Resources and Parks	• U.S. Environmental Protection Agency
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Range of Comments:

1. Ecology states in the draft permit that it is moving to an online system for permit administration and may modify the permit to require the electronic submission of certain documents once the electronic system becomes available. *EPA recommends that Ecology further explain that these documents must be submitted electronically pursuant to EPA's NPDES E-Reporting Rule, Phase 2 deadline of December 21, 2020.*

Ecology Response:

Ecology is in the process of redeveloping its PARIS (Permitting and Reporting Information System) database for electronic permit record storage and electronic submittal by Permittees. Due to the nature of software development and the time it takes, Ecology cannot specify a date in the permits. Doing so potentially creates a situation where a date is set in permit and electronic reporting is not available for a set of Permittees. Writing the permit in this way would automatically put Permittees out of compliance with the permit.

2. Provide reports to the Yakima Nation Environmental Management Program for lands that lie within the external boundaries of the Yakama Nation. Reports include the MPPP, export and application records, soil sampling, manure samplings, and yearly field budgets

Ecology Response:

Comment noted. Ecology chose to limit the area covered by the CAFOs permits so that they do not include these lands. Because these lands are not covered by the CAFO permits, Ecology will not be receiving reports from facilities located within the external boundaries of the Yakama Nation.

S7.A Submittal of MPPP

Commenters:

Whatcom Conservation District

Range of Comments:

1. Who is expected to write these plans? Each plan will take about 40 hours of staff time to develop. If engineering review is needed an additional 40 hours of staff time may be necessary. If 300 facilities are estimated to be covered by the permit, this is approximately \$1.5 million (at \$50/hour staff time) in costs not currently available to conservation districts.

Ecology Response:

The message that Ecology has received from industry representatives and producers is that producers (especially dairies) have and are following their plans, such as Dairy Nutrient Management Plans. Ecology has written the permits so that the elements of the MPPP satisfy federal requirements and are a subset of the information included in a currently existing plan. If a producer has a well written plan, and is following that plan, the time it should take to copy and paste the pieces of the plan into an MPPP should be fairly small. Otherwise, if the producer does not have a plan, or if the plan does not reflect current operations, or if the producer is not implementing their plan, the time taken to develop a MPPP could be significantly more. Ecology’s intent is that for most producers who have a well written plan and are implementing that plan, the producer could develop their own MPPP by copying the sections of their existing plan that apply to permit requirements.

S7.B One-Time Lagoon Report (now titled Existing Lagoon Assessment)

Commenters:

<ul style="list-style-type: none"> • Agri Beef Co. • Allan & Jo Ann Thomas • Barbara Gustafson • Baumgardner Dairy • Dave Bader • David Powell • Dennis Michelson • Evernook Valley Milk, LLC • Hillview Dairy • Kellen Postma 	<ul style="list-style-type: none"> • King Conservation District • Lagerway Dairy • Landon VanDyk • Larry Stap • Mike Schoneveld • N3 Consulting • Natural Resource Conservation Service • Paradise Jerseys • Rich & Ann Appel 	<ul style="list-style-type: none"> • Rick Poortinga • Sidney, Cornelius, & Aaron DeBoer • Simplot Land & Livestock • Vreugdenhil Farms • Washington State Dairy Federation • Wesen Organic Dairy • Whatcom Conservation District • Yakima Valley Dairy Federation
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Range of Comments:

1. Does this include dry manure storage structures? Referring to “. . .Permittee’s lagoons or other structure used for storing manure. . .”

Ecology Response:

The lagoon assessment only applies to liquid manure storage structures. This does not include transfer structures (e.g. pits used to capture barn flushing or to enable pumping used to move manure to and from a lagoon). Ecology clarified the permit language.

2. While Ecology staff have promised that the collection of this information is not directed at any plan or potential to require the construction of new lagoons or the imposition of new

lagoon regulations, that reassurance is suspect and the regulatory purpose and authority to require this information is also questionable.

Ecology Response:

This is not the statement that Ecology has made. Ecology has stated that we are not requiring lining of lagoons or construction of new lagoons as part of this permit (this permit cycle).

This requirement is about assessing the range of risk that lagoons pose to groundwater since all lagoons are not constructed the same, and since many lagoons do not have documentation for how they were constructed, or to what standard the lagoons were constructed.

3. Which lagoons need further assessment

- Instead of a One-time Lagoon Report for all lagoons, Ecology should use an evaluation process to determine which lagoons are high risk due to poor management or other characteristics such as groundwater data and flow, and focus on those high risk lagoons for further evaluation.
- These problems are most commonly identified during inspection when structures are empty or at full operational height. Ecology should consider utilizing aerial photography to determine if WSPs have questionable areas of discharge. Allow inspections to identify where further evaluation is recommended.
- Review NRCS lagoon design and compliance records prior to requiring additional costly assessments.
- Only allow NRCS to conduct lagoon engineering reports to avoid additional private consultant costs.

Ecology Response:

Ecology has modified the requirements to assess lagoons. Instead of a separate report, the permits require the use of NRCS Engineering Technical Note 23 to assess existing lagoons. The Permittee has 2 years from the date of permit coverage to complete the lagoon assessments.

The Tech Note 23 assessment results in a risk category. Category 1A, 1B, 2A, 2B, or 2C are low risk and 3A, 3B, 3C, or 4 are high risk. If the lagoon is a high risk or the bottom of the lagoon (measured from the outside of the compacted earthen liner) is less than 2 feet from the water table, the Permittee must develop and implement a plan (which is submitted to Ecology) to fix deficiencies in the lagoon noted by the assessment. This is to ensure that problems with high risk lagoons are addressed to protect water quality.

The 2 feet of vertical separation between the bottom of the lagoon and the water table is the standard minimum distance Ecology uses for all lagoons. This is the minimum distance necessary to provide filtering/attenuation of pathogen movement into groundwater.

Ecology has also modified the time frames for developing a plan to address high risk lagoons to match the MOU between Ecology and the conservation districts (6 months to develop plan, 18 months to implement).

4. Time to complete report and available staffing

- Two years is not a sufficient time for the handful of NRCS and Conservation district engineers in the state to conduct the studies you require.

- Are enough qualified engineers to do this work across the state within two years? Conservation districts report that they do not have staff available to perform this work.
- The only engineers with the experience and knowledge available to make reliable statements about lagoons are those who have a history of lagoon design and approval in the past: NRCS engineers. All others will introduce a level of risk that is unacceptable.
- Some engineers are not prepared to take on the risk that is associated with involvement with lagoons.
- Even with a two year delay in preparing the "One-Time Lagoon Report" it is probable that the requested information could not be collected or reliably used for measuring anything more than hypothetical discharges to groundwater unless followed with investigation and groundwater monitoring.
- Where is the time, cost, and expertise to do this work going to come from? Ecology did not do an appropriate economic analysis for the hundreds of lagoons liable subject to this process in Western WA.
- 40 hours underestimates the time needed to gather the information requested.

Ecology Response:

Comment noted. See response to special condition S7.B comment 3.

5. Data accuracy

- Much of the information required by the One-time lagoon report is very site specific and data sets may not accurately represent on-site conditions. Ecology should define the level of accuracy expected for the various lagoon site characteristics.
- What is the expectation of accuracy of this data. Soil laboratory analysis or (30 year?) old as built. Soil survey or Geotechnical Report? Referring to the data requirements in the one-time lagoon report.
- Permit lacks engineering specifications to make determinations of risk based evaluation of lagoon builds and associated compliance costs.

Ecology Response:

Ecology intends that the Existing Lagoon Assessment will accurately assess and represent the site specific conditions of each lagoon. Where data is available that may be used, it should be used. Where available data does not accurately reflect site conditions, data reflecting site conditions should be obtained.

6. Draft data requirements

- Soils used are often unknown, or the type may be known but native, imported or amended and percent clay is often not known.
- Percent clay can be determined by testing but may be variable across the pond.
- Preferential flow paths are not known without extensive analysis, Ecology should remove this as a requirement.
- Soil porosity is not an important soil characteristic, this should probably be specific discharge estimate and/or permeability instead.
- It is impractical to report soil porosity from the surface of the soil to the water table in cases where the water table is very deep (in addition, defined sampling intervals of depth like 0-5 ft, 5-20 ft etc. are important specifications to add).

- There are tremendous challenges regarding the requirement to report groundwater flow directions and rates. Ecology should remove this requirement.
- Length of time in operation is often unknown and it is recommended to reword to “if known”.
- The timing of solids removal from a lagoon is variable and may not be a useful piece of information to capture especially over a short 2-year window. A better metric may be the designed interval for solids removal and timing of actual removal.
- Construction data is not available for all lagoons. Sampling the soils used to construct the lagoon is intrusive, costly, and may not be representative due to soil variations. Data from the NRCS soil survey can generalize on-site materials and sub-grade soil properties. Imported materials as well as on-site materials, mixed or amended will have variable consistency. Ecology should consider using As-builts where available for this information and only focusing on this information in areas where a groundwater impairment is identified.
- In many cases, the information requires by the report does not exist and would be exorbitantly expensive or impossible to develop, collect, or document from historical records.
- These problems will require observations of empty and full operating levels.
- Some of this information may not be able to be determined without draining, cleaning, and boring into the bottom of lagoons. Have you consulted with professional engineers to see if this is even possible?
- A significant number of producers who have installed lagoons with the assistance of NRCS. Please allow farmers to use NRCS documentation to show lagoon design and construction criteria instead of a new engineering report. Lagoon evaluation has been done, and if more is needed, then there are alternatives to those outlined in this permit (for example, see the Oregon 2016 permit).
- The data required by the One-time Lagoon Report will be difficult to ascertain and will not determine volumes of materials that seep or groundwater impacts from seepage.
- The measurement of internal lagoon dimensions requires complete drawdown (empty lagoon completely) or floating measurements which are dangerous.

Ecology Response:

Comments noted. See response to special condition S7.B comment 3.

7. Other data requirements suggested to be included

- Ecology may want to include the additional measurement of maximum liquid elevation which is the distance above operating elevation.
- There are many undocumented groundwater wells. Ecology should consider requiring using the nearest recorded well.
- Liner materials used in WSPs to store liquid manure, meeting current NRCS standards require specific tests. Test recommendations such as:
 - ASTM D-5084 Measurement of Hydraulic Conductivity of Saturated Porous Material Using a Flexible Wall Permeameter.
 - ASTM D 5890 Swell Index for geosynthetic clay liners. Especially when liquid containing potassium, calcium, magnesium, etc. (manure) is stored to determine design life.

- ASTM D 3017 Nuclear Method to ensure moisture and compaction. Ecology should consider requiring records of specific tests pertaining to type of liner, such as found in NRCS Material and Construction Specifications. For further evaluation it is recommended that soil compaction tests and geotechnical investigations be conducted where groundwater impairment has been identified.
- Ecology should consider using aerial photography to determine if a lagoon has been modified from its original shape and compare to As-built when available.

Ecology Response:

Comments noted. See response to special condition S7.B comment 3.

8. Cost of One-Time Lagoon Report

- Economic Impact Analysis (EIA) does not account for costs associated with lagoon engineering study requirements.
- Economic Impact Analysis assumes that farms operate with only one lagoon.
- Use NRCS records or a lagoon risk assessment process opposed to engineering evaluations.
- High costs associated with the compliance of lagoon engineering assessment requirements, especially for farms with multiple manure lagoons.

Ecology Response:

Comments noted. See response to special condition S7.B comment 3.

See also responses comments in the Comments on the Small Business Economic Impact Statement section.

S7.C Annual Report

No comments received.

S7.D Yearly Field Nutrient Budgets

Commenters:

<ul style="list-style-type: none"> ● Dennis Michelson ● King County Department of Natural Resources and Parks 	<ul style="list-style-type: none"> ● N3 Consulting ● Underwood Conservation District 	<ul style="list-style-type: none"> ● Washington State Dairy Federation ● Whatcom Conservation District
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Range of Comments:

NOTE: This section does not exist in the final CAFO permits. The reporting requirements were incorporated into the annual report conditions (special condition S7.C) because submittal of the yearly nutrients budgets has been included as an annual report requirement.

1. The reference in this section should be to special condition S4.J.1, not S4.J.a.

Ecology Response:

Ecology has corrected this reference.

2. Submittal date for nutrient budgets

- The March 1 date is fine for reporting; however, it poses multiple issues when linked to Yearly Field Budget reporting requirements. Most notably is the requirement to have spring soil test and manure tests incorporated, which puts testing into approximately January, which is not feasible in most cases, nor helpful.
- The EPA permit as well as WSDA/NRCS planning tools all suggest or require nutrient budgeting. We agree this is an important practice. But requiring field-by-field budgets by March 1 is unworkable.
- Remove the March date and amend the language to be similar to the EPA or Idaho permit that says nutrient budgeting must be done to show planned applications and planting, as well as any amendments to budgeting as the season progresses.
- There are practical difficulties with requiring nutrient budgets based upon spring soil samples to be submitted by March 1. A March 1 submittal date means that soil samples must be taken in January or February. In western Washington fields are too wet during this time period to take samples that will be representative of field nutrient values. Ecology should remove the requirement to take spring soil samples in western Washington and the requirement to submit nutrient budgets.

Ecology Response:

Ecology has changed the submittal of nutrient budgets to December 31 and can be included as part of the annual report each Permittee is required to submit. So a nutrient budget used for land application during 2017 must be submitted with the annual report for 2017 on December 31, 2017.

See also response to special condition S4.I comment 1.

3. Nutrient budgets should not be reported

- We suggest changing the budgeting process to one in which farmers use and retain field budgets, as is already required in dairy nutrient management plans and in WSDA and NRCS guidance. We think those budgets are most relevant and must be available for inspections by WSDA under RCW 90.64 and any inspections needed for permit compliance by WSDA.
- Ecology should remove the requirement to submit nutrient budgets. Budgets are already available to WSDA inspectors during facility inspections and are working documents that are updated as the season progresses. Requiring submittal of nutrient budgets suggests that you suspect all producers of inappropriate manure applications.

Ecology Response:

In order to change the administrative paradigm of the permit from one where permit applicants submit nutrient management plans to Ecology for review, public comment, and approval before becoming effluent limitation to a paradigm where the permits contain the effluent limitations, submitting yearly nutrient budgets is necessary. Nutrient budgets are an effluent limitation of the permit, based on the permit (in narrative NMP fashion) specifying how the nutrient budget is calculated each year. Submittal of nutrient budgets along with the annual report is necessary to determine permit compliance.

See also responses to special condition S4.J comment 1 and 2.

- Reporting actual crop yields will not provide any useful information for a lot of work on the Permittees part.

Ecology Response:

Crop yields are required to be reported 40 CFR 122.42(e)(4)(viii). Crop yields are also necessary for nutrient budgeting purposes as yields allow Ecology to estimate how much nutrients crops require and compare to the actual amounts applied.

S7.E Noncompliance Notification (S7.D in final permits)

Commenters:

<ul style="list-style-type: none"> Natural Resource Conservation Service 	<ul style="list-style-type: none"> RE Sources for Sustainable Communities 	
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Range of Comments:

NOTE: Due to removal of special condition S7.D Yearly Field Nutrient Budgets from the final CAFO permits, this section is labeled special condition S7.D in the final permits.

- The permittee should notify Ecology immediately if an unauthorized discharge occurs. This can be accomplished in a variety of ways, including a phone call, email, etc.

Ecology Response:

This requirement is based upon 40 CFR § 122.41(l)(6) where the timing of reporting set at 24 hours. In order to maintain consistent reporting requirements between the combined and state only permits, the non-compliance notification language is the same.

- A reference is made to what is called "this special condition". It is unclear which special condition is referred to.

Ecology Response:

Ecology has clarified that the "this special condition" refers to the special condition in which the clause resides which is special condition S7.D.

S7.F Spills Reporting (S7.E in final permits)

NOTE: Due to removal of special condition S7.D Yearly Field Nutrient Budgets from the final CAFO permits, this section is labeled special condition S7.D in the final permits.

No comments received.

S8. APPENDICIES

Comments that Ecology receive on the permit appendices are addressed under the individual appendix headings after the General Conditions.

COMMENTS ON THE GENERAL CONDITIONS OF THE DRAFT CAFO PERMITS

G1. DISCHARGE VIOLATIONS

Commenters:

Natural Resource Conservation Service

Range of Comments:

1. Defined discharge threshold frequencies and concentrations are not found in the permit.

Ecology Response:

Discharge limits are stated in special condition S3. Any discharge to surface or groundwater requires a permit.

G2. PROPER OPERATION AND MAINTENANCE

Commenters:

Natural Resource Conservation Service

Range of Comments:

1. Proper operation and maintenance: the following sentence ought to be expanded or otherwise made clearer; "This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of this permit."

Ecology Response:

Comment noted. If a facility can remain in compliance without backup systems, such systems are not necessary.

G3. RIGHT OF ENTRY

Commenters:

Washington Farm Bureau

Range of Comments:

Members are very concerned about, and question the authority for, permit enforcement provisions proposing new right of entry authority for Ecology. We are especially concerned about impacts on the potentially hundreds of operations that may now be required to obtain state permit coverage. This new burden should be reduced and made less burdensome by instead relying on WSDA implementation and right of entry provisions in the Dairy Nutrient Management Act.

Ecology Response:

Comment noted. Right of entry for Ecology is provided by RCW 90.48.090.

G4. PERMIT COVERAGE REVOKED

Commenters:

Washington Cattlemen's Association

Range of Comments:

1. Revocation of permit coverage

- Permit revocation should only be a last resort tool.
- General Condition G4.A should be amended to state: “[v]iolation of any term or conditions of this permit, *and the Permittee takes no action to address the issue.*”
- General Condition G4.B should be amended to state: “[o]btaining coverage under this permit by misrepresentation or ~~failure~~ *purposefully failing* to disclose fully all relevant facts.” This change protects permit holders from consequences arising from any unintentionally omitted facts.
- General Condition G4.D should be eliminated. The condition that the Permittee “*may not cause or contribute to water quality standards violations. . .*” is vague and created uncertainty for Permittees.

Ecology Response:

This condition is included in all the general permits that Ecology issues and is not changed. It is an important compliance tool for situations where a Permittee is purposefully non-compliant. Revocation of permit coverage rarely happens as it is a last resort tool in Ecology's enforcement processes. It is also an Ecology action that would be appealable.

G5. GENERAL PERMIT MODIFICATION AND REVOCATION

Commenters:

Washington Cattlemen's Association

Range of Comments:

1. Permit revocation should only be utilized after all other means of gaining compliance have been exhausted. We suggest that the following language should be added following the first sentence in the first paragraph: “All options that allow permit holders to modify the conditions of their permits will be considered first. Only after all collaborations have failed to yield an acceptable solution will revocation will be considered.”

Ecology Response:

Revocation as used in this general condition refers to the general permit itself, not the permit coverages held by Permittees. This is a re-opener clause for the general permit terms and conditions that would allow Ecology, through a public process, to modify the permit conditions if a situation occurred where laws or rules changed that require modification to the permit, or in a situation where it became clear that the permit conditions are not protective of water quality.

G6. REPORTING A CAUSE FOR MODIFICATION

No comments received.

G7. TOXIC POLLUTANTS

No comments received.

G8. OTHER REQUIREMENTS OF 40 CFR

No comments received.

G9. COMPLIANCE WITH OTHER LAWS AND STATUTES

No comments received.

G10. ADDITIONAL MONITORING

Commenters:

• Natural Resource Conservation Service	• Washington Cattlemen's Association	• Whatcom Conservation District
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Range of Comments:

1. Ecology should remove this permit condition. Ecology may not add additional requirements to a permit after it has been issued.

Ecology Response:

As stated in the general condition, Ecology may establish extra monitoring requirements through an administrative order process (for a specific Permittee) or through modifying the general permit through a public process. If Ecology were to require a Permittee to perform extra monitoring, it would be through the administrative order or penalty process. These processes are separate from permit process and are used to enforce water quality laws, permit requirements, or address potential water quality problems not addressed by permit requirements. Such actions are appealable to the PCHB within 30 days.

2. What are the limits to the types and frequency of extra monitoring Ecology can impose on Permittees under this condition?

Ecology Response:

This is going to be a site specific and situation specific determination depending on the water quality impacts that are of concern at the site.

3. Under what conditions would Ecology consider imposing additional monitoring requirements for a Permittee?

Ecology Response:

This is going to be a site specific determination. One example may be a situation where a Permittee has continually had high fall soil sample analysis results and has failed to reduce

fall soil nutrient samples successfully. In such a case, Ecology may consider requiring further monitoring through an Administrative Order process.

G11. PAYMENT OF FEES

No comments received.

G12. REQUESTS TO BE EXCLUDED FROM COVERAGE UNDER A GENERAL PERMIT

No comments received.

G13. TRANSFER OF PERMIT COVERAGE

No comments received.

G14. PENALTIES FOR VIOLATING PERMIT CONDITIONS

Commenters:

Washington Cattlemen's Association

Range of Comments:

1. What are the statutory authorities that allow Ecology to issue penalties for permit violations?

Ecology Response:

Ecology's authority to bring enforcement actions is provided by CWA Section 309 (33 USC § 1319), RCW 90.48.037, RCW 90.48.160, RCW 90.48.260, RCW 90.48.144(1), RCW 43.21B, and WAC 173-226-250.

2. May the United States Environmental Protection Agency also impose federal penalties or other enforcement actions for permit violations?

Ecology Response:

Combined:

While each agency could take a separate enforcement action for a violation generally only one agency will take an enforcement action. Since Ecology is the delegated permitting authority in Washington (except for federal facilities and Tribal land) Ecology is the most likely agency to take enforcement actions. The exception would be enforcement for criminal actions, which would be turned over to EPA.

State Only:

EPA does not have authority to enforce permit conditions of a permit issued under only state authorities.

G15. SIGNATORY REQUIREMENTS

No comments received.

G16. APPEALS

No comments received.

G17. SEVERABILITY

No comments received.

G18. DUTY TO REAPPLY

No comments received.

G19. MONITORING BEYOND PERMIT REQUIREMENTS

No comments received.

COMMENTS ON THE DRAFT CAFO PERMIT APPENDICIES

APPENDIX A: ACRONYMS AND DEFINITIONS

Commenters:

<ul style="list-style-type: none"> Natural Resource Conservation Service South Yakima Conservation District 	<ul style="list-style-type: none"> Washington Cattlemen’s Association Whatcom Conservation District 	<ul style="list-style-type: none"> Yakima Valley Dairy Federation
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Range of Comments:

- Ecology should develop or include complete definitions of all critical terms, with measurable thresholds, or reference thereto.
- Without suitable definitions, designers and operators are unable to create/operate systems that comply with required regulations, and the door is open for ambiguity and unequal treatment of producers/landowners.

Ecology Response:

Definitions that are unique to a permit or are specialized are included as an appendix of the permits Ecology issues. Definitions are terms were included as Appendix A of the draft permits and were available for public comment along with all other permit documents.

- Storage basins for liquid manure are only properly referred to as Lagoons when there is an active treatment process underway, typically aeration. Since aeration increases air emissions and odors in many cases, it has widely fallen out of favor.
- Lagoon is not the proper term to use for temporary storage ponds. Lagoons are treatment vessels with measured loading rates and specific depths for actual treatment purposes. Temporary storage ponds are just that, “temporary.”
- The term “lagoon” needs additional clarification that explicitly exempts dry stack scrape pits. They are commonly used by CAFOs to remove manure and pose no threat to groundwater.

Ecology Response:

Ecology has used the term lagoon instead of waste storage pond because lagoon is the term that is used in common conversation.

- The term “control” has an unnecessary comma in the definition. “Performing, directing, managing, overseeing, supervising, or giving instruction about [comma removed] any action or decision.”

Ecology Response:

Ecology has kept the last comma as it implements the last antecedent rule ensuring that the “*any action or decision*” clause clearly applies to all of “*Performing, directing, managing, overseeing, supervising, or giving instruction about*” and not just “*or giving instruction about*”.

- Saturated soil means that soil has soil water filling 100% of its soil pore volume.
Ecology Response:
Ecology has added this clarification.
- Defining “animal” to mean “animal unit,” as it is in Table 2, is recommended
Ecology Response:
Comment noted. Table 2 does not use animal units, it uses animal numbers. This aligns with the federal CAFO rule definition of CAFO.
- The definition of “discharge” is perplexing for a number of reasons. First, “the addition of any pollutant” can literally be reduced to a single molecule. Second, there is no rate or flux included in the definition that depicts frequency or volumetric allowances. Third, it may be important to establish when a discharge includes a direct link in which “waters of the state” receive pollutants from any given CAFO.
Ecology Response:
Comment noted. Rate or frequency and volumetric allowances are covered by special condition S3, Discharge Limits.
- The CAFO definition differs significantly from the EPA definition in 40 CFR § 122.23
Ecology Response:
Comment noted. See response to special condition S1 comment 1.
- We are opposed to the inclusion of the phrase “management area” in the definitions and throughout the draft permit. Ecology has failed to provide how the addition of this phrase provides any clarity or direction. If this phrase is retained in the Appendix, Ecology should clarify further.
Ecology Response:
Comment noted. The term “management area” does not show up on a search of the permit documents, include definitions.
- Ecology should specifically exempt land used for grazing from the definition of management area so that these areas are not subject to the same requirements as land application areas.
Ecology Response:
See response to special condition S4.E comments 1 and 3.
- The term “waste” is too vague and needs further clarification. The vagueness will impact both the WCA and WCFA members, as they could feasibly be liable for discarding any material, whether or not it impacts the waters. We insist that this definition be revised to give members more clarity and provide them with regulatory certainty as to what creates liability and what does not.
Ecology Response:
Ecology used to dictionary definition of waste, however Ecology has removed this definition from the permits as it is not needed.

APPENDIX B: ANNUAL REPORT

Commenters:

U.S. Environmental Protection Agency

Range of Comments:

1. The amount of nitrogen and phosphorus applied for each field should be expressed as a single number in the same units as the Yearly Field Nutrient Budget for easy comparison between the two numbers.

Ecology Response:

Comment noted. The federal CAFO rule requires reporting the actual nitrogen and phosphorus content of the manure, litter, and process wastewater. This is an inaccurate measurement because nutrient content concentration will change over time based on rainfall, evaporation, and other environmental factors which lead to less water being mixed with manure during the summer months versus winter months. It is unclear in the federal rules when the manure, litter, and process wastewater must be analyzed for nutrient content for reporting purposes, and if there are multiple analysis throughout the year, which is to be reported as the "correct" analysis. Additionally, the nutrient content from various sources will be different. Therefore the annual report form requires reporting the nutrient content of each form separately. If a total is desired, nutrient content from each source may be summed. Additionally, Ecology is requiring at least three nutrient source analysis spaced throughout the year, so the annual report provides space for reporting each of those analysis. See response to Special Condition S4.H comment 3.

2. The permit should require CAFOs to provide supporting calculations showing how the applications were converted to lbs/acre.

Ecology Response:

Comment noted. The federal CAFO rules does not require reporting this information.

3. Draft Annual Report Form: In Section IV of the Draft Annual Report Form, "Field Information," the columns should be revised so that there is a column for nitrogen reporting and a separate column for phosphorus reporting

Ecology Response:

Ecology has made this change.

4. Draft Annual Report Form: In Section IV of the Draft Annual Report Form, "Field Information," all reported quantities of application should be in units of lbs/acre and summed so the total amounts of nitrogen and phosphorus that were applied to each field can be directly compared with the limits provided in the Yearly Field Nutrient Budget for the appropriate year.

Ecology Response:

Comment noted. Reporting in lbs/acre will not allow direct comparison with the nutrient budget which calculated the amount that may be land applied in a total number of pounds of phosphorus and nitrogen. It is up to the Permittee to determine the lbs/acre application rate prior to land applying to prevent exceeding the total amount of nitrogen that may be land applied to a field.

5. The Annual Report should require that supporting calculations be provided to show the conversion of each nutrient application to lbs/acre.

Ecology Response:

Comment noted. The federal CAFO rules do not require reporting these calculations.

6. For each field that has not achieved a "Low" status for nitrate concentration, the Annual Report should require the Permittee to describe all of the management measures that the Permittee implemented to reduce nitrate concentrations in the field.

Ecology Response:

Comment noted. The adaptive management information is included on the Permittee's yearly nutrient budget forms.

7. In some fields, more than one crop is grown during the year. A typical rotation for some dairies would be silage corn followed by triticale. The form appears to assume a single crop and does not readily accommodate more than one crop.

Ecology Response:

The annual report requires reporting of the amount of manure, litter, or process wastewater land applied to a field during the calendar year. In a double cropping system, the total amount applied to the field for each crop would be reported. Double cropping/winter cover crops are accounted for by requiring two nutrient budgets, one for each crop. See responses to special condition S4.J comment 21.

8. For each field, a line chart should be required that shows the historical Spring and Fall soil nitrate and phosphorus quantities in the root zone (0-24") since the permittee received coverage under the General Permit. This will provide a visual snapshot of progress over time in reducing nutrient levels in each field. The chart should show time along the x-axis, and lbs/acre on the y-axis.

Ecology Response:

Comment noted. This is beyond the reporting requirements in the federal CAFO rules.

APPENDIX C: YEARLY FIELD NUTRIENT BUDGET

Commenters:

U.S. Environmental Protection Agency

Range of Comments:

1. The Yearly Field Nutrient Budget should indicate that the maximum amounts of nitrogen and phosphorus that may be applied to a field are enforceable limits.

Ecology Response:

See response to special condition S4.J comment 1.

2. The nitrogen and phosphorus application limit for each field should be expressed as a single number in the same units as reported on the Annual Report Form for easy comparison between the two numbers.

Ecology Response:

See response to Appendix B: Annual Report comment 1.

3. In some fields, more than one crop is grown during the year. A typical rotation for some dairies would be silage corn followed by triticale. The form appears to assume a single crop and does not readily accommodate more than one crop.

Ecology Response:

Ecology has modified the nutrient budget requirements to account for double cropping and winter cover crops. See responses to special condition S4.J comment 21.

GENERAL COMMENTS ON THE DRAFT CAFO PERMITS

Commenters:

<ul style="list-style-type: none"> • Abdirahman Mohamed • Agri Beef Co. • Albert Sienbring • Alexa Siebring • Alexander Rollins • Allan & Jo Ann Thomas • Alyce Werkema • Amanda Dickinson • Amelia Marchand • American Farmland Trust • Amy Hansen • Andrew DeHaan • Andrew Dykstra • Andrew Ries • Anna Nissen • Annette Bost • Aquat Permanente • Arlene French • Art & Theresa Mensonides • Audrie Shagren • Barb Drake • Barbara Thevenaz • Beavermarsh Farm, LLC • Becky Bos • Benjert Farms • Bette Vander Haak • Beverly Vree • Brandon Dieleman • Breanna Randall • Brian Magner • Brian Schoch • Caleb Laieksi • Cari Duffy • Carleen Polinder • Carol Bowman • Carolyn Lowry • Cedar Park Dairy • Center for Environmental Law and Policy • Center for Food Safety • Chamberlain Dairy • Chris Bevers • Chris Wooten • Christine True • Citizens for a Health Bay • Citizens for Sustainable Development • Colleen Gray 	<ul style="list-style-type: none"> • Friends of Toppenish Creek • Gary Davis • Gary Herbert • Gayle Janzen • Greg Bode • Harlan Kredit • Hayley Mathews • Illene Le Vee • Ivan & Alicia Likkel • Jackson Parriera • Jan • Jan Whitefoot • Jane Beattie • Janet & Steve Keller • Jason Vander Kooy • Jeannette Folkertsma • Jeff Rainey • Jerry Owen • Jim Dyjak • Jim Flynn • Jim Hansen • Jim Leuba • Jo Ann Herbert • Joan Vande Hoef • Joan Vander Giessen • Joel Green • John Roskelley • Jon Vanderkooy • Jose Martinez • Josh • Joy • Joy Gilfilen • Judith Kawell • Judy Hopkinson • Julienne Loveall • Karen Kooy • Karen Steensma • Karen Steensma • Kate Packard • Katherine Steensma • Kathleen Schormann • Kay Morris • Kellen Postma • Kelly Callahan • Ken & June Bright • Kerry Peterson • Kevin Coyne • Kim Blass 	<ul style="list-style-type: none"> • N3 Consulting • N3 Consulting • Nancy Chapa • Natural Resource Conservation Service • Nelsine Anderson • Noah Bartz • Norm Peck • Northwest Indian Fisheries Commission • OneAmerica • Pam Borso • Pam Tutino • Patsy Tyvand • Patty Martin • Paul & Louann Chapman • Paula McMinn • Paula Rotondi • Paulette Huisingh • Pete Dejage • Pete DeJager • Peter Haase • Peter Holcomb • Pomeroy Dairy, LLC • Postma Dairy • Progreso: Latino Progress • Puget Soundkeepers Alliance • Randall Collins • Randy Honcoop Farms • Raven's Eye Consulting • RE Sources for Sustainable Communities • Rebecca Canright • Rebecca Wolfe • Rev. Ken Jones • Rich & Ann Appel • Richard Badalamente • Rick Poortinga • Robert Baker • Robert Brandt • Robert Pelant • Rodgers Engineering • Roger Bajema • Ron & Judy Wiersma • Ron Reimer • Rose Lagerberg • Ru-Ben Dairy • Ruth DeBoer
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<ul style="list-style-type: none"> • Colleen Laing • Connie Anderson • Cory Kuipers • CROPP Cooperative, Organic Valley, Organic Prairie • Cynthia Cannon • Cynthia Collings • Dan & Leea Heeringa • Darryl Van Beek • Dave Bader • Dave Lenssen • Daveen Jones • David Asher • David Friscia • David Lukens • David Morales • David Ortman • David Powell • Dean & Martha Effler • Dena Jensen • Dennis Michelson • Diana Grijalva • Diane Murphy • Diane Tilstra • Dirk Burgon • Don Tilman • Doug Camenzind • Doug Dostal • Duane Forester • Duane Scholten • Dwayne Faber • Elizabeth Steensma • Ella Melik • Ellen Baker • Ellie Steensma • Elva Douma • Emily Gibson • Emily Krieger • Environmental Engineering Associates • Eric McCullough • Eric Vander Kooy • Esther Faber • Evernook Valley Milk, LLC • F.A. Farm • Form email with Subject Line: Please Protect Drinking Water From Factory Farm Pollution • Form Email with Subject Line: Please protect our drinking water from harmful manure pollution 	<ul style="list-style-type: none"> • King County Department of Natural Resources and Parks • Kip Dunlap • Landon VanDyk • Larry Fendell • Larry Helm • Larry Stap • Larry Stout • Leah Boehm • Leah Brady • Leanne Hall • Lee Bode • Lee Bode • Lenssen Dairy • Leo Butzel • Les Boon • Liz Marshall • Lois & Percy Hoekema • Lorena Lopez • Louann & Paul Chapman • Lovel Pratt • Lummi Indian Business Council • Lummi Nation • Lynne Pendleton • Lynne Shamay • Mara Rockwell • Margie Van Cleve • Marion Beddill • Mark Cole • Mark Troupe • Marlin Hutterian Brethren • Marline White • Martin Kimeldorf • Martin Kimeldorf • Marty Vreugdenhil • Marvin Hoekema • Mary Baechler • Matthew Seaman • Maude Laslie • Max Perry • Meagan Smit • Melissa & Jim Briggs • Mellema Farm • Mensonides Dairy, LLC • Michael Anderson • Michael Craven • Michael Sennett • Mike Bennett & Susan Ward • Mike Tuben • Mike VanBerkum • Mindy Roberts 	<ul style="list-style-type: none"> • Ruth Siebring • Ryan Nelson • Sandi Kornelis • Sandra Roubal • Sandy Braden • Sandy Robson • Senator Warnick, 13th Legislative District • Shawna VanderLeest • Sherman Polinder • Sidney, Cornelius, & Aaron DeBoer • Simplot Land & Livestock • South Yakima Conservation District • Stacy Neal • Steensma Dairy • Stephanie Davis • Stephanie Smith • Steve Groen • Steven Beebe • Storm Haaven Dairy • Susan Johnson • Swinomish Indian Tribal Community • Swinomish Indian Tribal Community • T Bar T Farms, Inc • Teresa McQueen • Theo & Cheyl VanBerkum • Tim Van Hofwegen • Tony Veiga • Tony Viega • Troy Lenssen • Twila Slind • Van Berkum & Sons Dairy • Veryl & Connie Kooi • Vladimir Shakov • Washington Cattlemen's Association • Washington Environmental Council • Washington Environmental Council • Washington Farm Bureau • Washington League of United Latin American Citizens • Washington State Dairy Federation • Wendy Harris • Western Environmental Law Center • Whatcom Family Farmers
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<ul style="list-style-type: none"> • Form email with Subject Line: Please support stronger CAFO rules • Frank James • Fransisca Meulen 	<ul style="list-style-type: none"> • MJD Farms • Monica Persson • Monte Hokanson • Morgan Hepfer • Mt. Baker Vet 	<ul style="list-style-type: none"> • Whatcom Farm Bureau • Wil-O-Acres Goat Dairy, LLC <p>Zach Steensma</p>
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Range of Comments:

1. Farms with NRCS approved and compliant facilities should not be punished with more regulations.

Ecology Response:

Comment noted. See also response to special condition S1.A and S2.A comments.

2. CAFO permit needs a thorough manure and ground water quality literature review to ensure public health and environmental quality are protected on the basis of credible information.

Ecology Response:

Comment noted.

3. WSDA shows that 97% of dairy crop acres are meeting requirements with continuing improvements.

Ecology Response

97% compliance means that those crop lands have met the compliance targets set by the WSDA dairy nutrient management program (DNMP) under chapter 90.64 RCW. This does not also mean that all of those same crop lands automatically meet the requirements of chapter 90.48 RCW and the federal Clean Water Act (some of them may, some of them may not).

There is a difference between the compliance targets that WSDA selects for emphasis, and compliance with state water quality laws. Compliance targets are generally not set in statute or rule, but are selected by the DNMP and then targeted for inspection and outreach efforts to reach those compliance targets. For those that obtain permit coverage, compliance with the permit is required.

4. CAFO permit lacks accommodation of farmer’s who have dikes and irrigation systems that are at higher elevations than their fields.

Ecology Response:

Comment noted. See responses to special condition S4.N comments.

5. A NASA study found ocean waters vulnerable to groundwater contaminants and found particular threat to waters of the Pacific Northwest.

Ecology Response:

Comment noted.

6. Synthetic nitrates in alternative fertilizers are a more hazardous pollutant than manure.

Ecology Response:

Comment noted. Other non-CAFO agricultural sources of nitrates from commercial fertilizers are addressed through Ecology’s nonpoint program.

7. CAFO permit penalizes farms with requirements not founded in good agricultural science.
Ecology Response:
Comment noted. See also response to special condition S1.A and S2.A comments.
8. Low income and Hispanic communities are most impacted by CAFOs, while acts to improve public health and safety were not taken.
Ecology Response:
See response to the section titled Comments on Environmental Justice Related to The CAFO Permit. Water quality laws require that all state waters (surface and ground) are protected equally.
9. Utilize the Department of Ecology's authority to enforce compliance with other laws such as the Resource Conservation and Recovery Act (RCRA) WAC 173-226-070 section 3(b).
Ecology Response
Where other laws and rules affect water quality (such as drinking water) Ecology has incorporated requirements for the protection of water quality.
10. Health and economic burden of nitrate contamination and health risks disproportionately affect low-income Spanish speaking population.
Ecology Response:
See response to the section titled Comments on Environmental Justice Related to The CAFO Permit.
11. The State House and Senate rejected legislation for the state-only option for the CAFO permit.
Ecology Response:
Comment noted. Ecology made the decision to issue two permits based on some CAFOs have only groundwater discharges which are not regulated by the Clean Water Act.
12. Lower Yakima Valley needs specific enforceable regulations regarding ground water.
Ecology Response:
Comment noted. Water quality laws require that all state waters (surface and ground) are protected equally. The Yakima Valley Groundwater Management Area is the venue in which to pursue area specific controls.
13. Costs associated with CAFO compliance disproportionately impact organic dairies, while market based organics standards are more effective in protecting water quality.
Ecology Response
See response to special condition S4.N comment 3 and responses to Comments on the Small Business Economic Impact Statement.
14. CAFO permit fails to provide dairy farmers discretion needed to ensure cropland and pastureland are properly fertilized.
Ecology Response:
Comment noted. See responses to special condition S4.J, S4.K and L, and S4.N comments.

15. Narrow permit to focus on facilities that present a genuine threat to waters of the state.
Ecology Response:
The requirement to obtain permit coverage only applies to CAFOs that have a discharge.
16. The Department of Ecology is not addressing the continued degradation of Sumas-Abbotsford aquifer by Canada.
Ecology Response:
Comment noted.
17. The Department of Ecology never made reference to WSDA’s recent detailed survey analysis on all dairy storage basins statewide.
Ecology Response
WSDA has done a number of focused inspections related to lagoons. These include spring and fall inspections (more in some areas of the state than others) to determine if lagoon capacity is adequate for winter storage especially in high risk areas such as Whatcom County, mapping of lagoon locations, and a test of NRCS Engineering Technical Note 23 on lagoons in the lower Yakima valley. WSDA has not done a detailed survey of all dairy lagoons statewide. (Communication with WSDA)
18. Exempt storage basins filled with “Class D” reclaimed water and the associated record keeping requirements.
Ecology Response:
Comment noted. There is currently no reclaimed water rule under which class D water exists.
19. Concern over suspension of rules during flooding.
Ecology Response:
Flooding is generally going to occur during times of year (e.g. winter) that land application is prohibited by the permit. Therefore, if flooding occurs, there should be limited impact from flood water running off land application fields. Additionally, flooding means very high volumes of water, which will help dilute any manure, litter, process wastewater, or other organic by-products present on a field at that time.

Combined:

The combined permit conditionally authorizes the discharge of manure, litter, process wastewater, and water that has come into contact with those and other contaminants from the production area to surface waters of the state in certain circumstances. The circumstances in which a discharge is conditionally authorized depend on whether the discharge is from a land application field or the CAFO production area

For the production area, if it is designed, constructed, operated, and maintained to contain all manure, litter, and process wastewater including the runoff and directed precipitation during a 25-year, 24-hour rainfall event, then discharges from storm events such as flooding are conditionally authorized.

For land application fields, discharges are allowed if the Permittee is in compliance with the permit. This means that in general the Permittee has implemented setbacks or buffers to

reduce field run-off, has land applied according to a nutrient budget, and applies at appropriate rates and times. In such circumstances, discharges from flooding are conditionally authorized.

State Only:

This permit is somewhat different than the combined permit in that it does not conditionally authorize any surface water discharges (all surface water discharges are prohibited). In a flooding situation, Ecology may exercise its enforcement discretion to determine if it is appropriate to enforce against a Permittee for a discharge.

20. Opposed to increased regulations, leave CAFOs under WSDA regulations and provide the option for the Department of Ecology general permit.

Ecology Response:

Both the CWA and chapter 90.48 RCW require that an operation obtain a permit for the discharge of pollutants into water, regardless of whether the discharge is intentional or not. Ecology is the delegated Clean Water Act permitting authority in Washington. Ecology and WSDA have a partnership in implementing the CAFO permits, but Ecology is required to issue the permits.

21. Update laws to protect water supply and quality.

Ecology Response:

Thank you for your comment. The updating of laws to further protect water quality and supply is an act of legislation and beyond the scope of the current permitting process for CAFOs. However, it is the intention of Ecology to uphold and require compliance with existing water quality laws through the issuance and administration of our combined and state only permits.

Water quality permits do not address water supply which is outside permitting authorities. Supply is handled through the water rights processes run by the Water Resources program.

22. Provide a more environmentally protective CAFO permit.

Ecology Response:

The CAFO permits are developed to comply with existing water quality laws and standards.

23. Increased regulations will hurt farmers who are stewards of the land.

Ecology Response:

The regulations of the CAFO permit have been developed so that regulatory compliance will not be too financially burdensome upon permittees while still meeting legal requirements and being protective of water quality.

See also the updated Small Business Economic Impact Statement available on Ecology's CAFO permit website and responses to Comments on the Small Business Economic Impact Analysis.

24. Reconsider CAFO permit requirements.

Ecology Response:

Thank you for your comment.

25. Provide financial incentives for farmers to comply with AKART.

Ecology Response:

Ecology does not provide incentives for regulatory compliance. Fiscal costs of compliance with the CAFO regulations is considered a cost of doing business. However, there may be third parties such as NRCS that offer grants, technical assistance, or cost share programs for farmers interested in the implementation of water quality protection measures that meet the requirements of this general permit.

26. Prevent the turnover of farms to developers due to financial hardship caused by expensive regulations.

Ecology Response:

Comment noted. The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality. Ecology does not have authority over local land use decisions. Zoning and land use decisions are the jurisdiction of the local government (e.g. city or county).

27. Lack of demonstration by the Department of Ecology that manure is a significant source of pollutants.

Ecology Response:

Ecology is not required to demonstrate that manure is a significant source of pollutants.

28. No established statewide limit for nitrate loading exists.

Ecology Response:

No statewide limit of nitrate loading in soil exists. However, the groundwater quality standards including a nitrate standard, which serves as a limit in the CAFO permits. This limit is 10 mg/L nitrate. However, while this is the limit, loading to the groundwater is not allowed cause degradation beyond current conditions.

29. CAFO permit will put small dairies out of business while incentivizing bigger more hazardous CAFO operations.

Ecology Response:

The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality. See the updated Small Business Economic Impact Statement for details on projected costs of permit compliance. Ecology has modified permit conditions based on comments which reduce the costs of permit compliance.

Additionally, small CAFOs are not automatically required to obtain a permit based on having a discharge. Ecology must go through an extra process to determine that a small CAFO is a significant contributor of pollutants before designating the small facility to be a CAFO and requiring them to obtain a permit.

30. CAFO regulations redundant to existing state and federal regulations.
Ecology Response:
The CAFO general permits were developed under these regulations into general permits that ensures compliance with state and federal laws.
31. Increase coordination with WSDA and local conservation districts.
Ecology Response:
Thank you for your comment; it is our intention to continue working closely and improve interagency coordination with the WSDA.
32. The Department of Ecology did not develop the CAFO permit policies with assistance from available resources to determine the impact upon farmers, citizens, local economies, or the environment.
Ecology Response:
Ecology conducted many listening sessions, workshops, and stakeholder engagement meetings since 2014 during the development of the CAFO general permit. Ecology is continuing to meet with the public to discuss the final permit outcomes.
33. Dairy farmers at risk due to rising pressure from urbanization.
Ecology Response:
Comment noted, unfortunately Ecology does not have jurisdiction over local land use decisions that influence the degree of localized development pressure. Local land use and planning authority is a power delegated to cities and counties by the Washington Growth Management Act (RCW 36.70) and is beyond the scope of Ecology's authority for this permitting process.
34. Dairies unable to pass-on additional production costs associated with permit compliance because milk is sold as a global market commodity.
Ecology Response:
Ecology understands the limitations that are presented by engaging in the global market. However, it is the responsibility of Ecology to ensure water quality standards are adequately maintained within the State of Washington.
35. Permit ignores difference between eastern and western Washington operations.
Ecology Response:
Differences between the environmental conditions in eastern and western Washington was a topic that Ecology heard about during development of the preliminary draft CAFO permit. Ecology incorporated allowances where possible for the environmental differences in the permit where appropriate. For example, soil sampling is different depending on which area of the state a CAFO is located.
36. Draft permit as proposed allows for the continued degradation of ground and surface water and fails to protect water quality.
Ecology Response:
Comment noted. Ecology has written the CAFO permits to meet its legal and technical requirements to be protective of water quality, and where more information is necessary to

assess impacts, to gather the needed information. Protecting water quality does not mean that no discharges are allowed. Discharges of pollutants are conditionally authorized as long as a Permittee is in compliance with their permit. The permit conditions limit what may be discharged so that the discharge does not violate water quality standards.

37. Restore citizen law suit provisions provided by the Clean Water Act in the State Waste General Permit option.

Ecology Response:

The State Waste Discharge general permit program is authorized by the Washington State Legislature under the provisions of chapter 90.48 RCW, which does not include citizen law suit provisions. Addition of a citizen law suit provision into the State Waste Discharge general permit program requires legislative action.

38. Water quality issues are the result of the actions of people and human waste, not just cows.

Ecology Response:

Comment noted, Ecology recognizes that cows are not the sole source of water quality degradation within the state. Ecology administers twenty-four unique general permits (covering about 6,000 businesses) and hundreds of individual permits in order to continually protect and improve water quality across the state from all sources of pollution.

39. Return to the single permit option under the NPDES program with all the protections of the federal Clean Water Act. The combined permit should be the only option in western Washington.

Ecology Response:

Ecology is issuing two permits. A state only permit and a combined permit.

Federal (CWA) requirements only apply to surface water discharges. State requirements apply to surface and groundwater discharges. A CAFO that only has groundwater discharges is not required to comply with federal CAFO requirements because federal requirements only apply to surface water discharges. However the CAFO would be required to comply with state requirements.

Only issuing a single combined permit would make CAFOs that only have groundwater discharges liable for federal requirements that only apply to surface water discharges. Therefore, for those facilities that only have groundwater discharges Ecology is providing the state only permit option. This limits the liability of the CAFO to the set of regulations that apply to the type of discharge they have.

40. Conduct an environmental justice impact analysis of communities affected by CAFOs across the state and act upon the findings.

Ecology Response:

See responses to Comments on Environmental Justice.

41. Scale levels of oversight to avoid undue burden on smaller facilities, increasing oversight for large facilities.

Ecology Response:

Because all CAFO facilities have the potential to impact water quality, all CAFO Permittees will receive the same degree of regulatory oversight and are required to follow to permit conditions

42. Define a clear process for remedial actions and specify potential enforcement and penalties.

Ecology Response:

The permits require that there are no unauthorized discharges and that Permittees maintain compliance with the permit requirements. Permittees are required to conduct regular monitoring of soil nutrient loading and maintain records of operations and maintenance, land applications, and manure exports. Additionally, a manure pollution prevention plan (MPPP) and annual report must be submitted to Ecology for review.

Enforcement and penalties will be determined as necessary by Ecology. Furthermore, enforcement actions and penalties are determined by factors such as, public health risk, environmental damage, willful or knowing violation of the permit terms and conditions, unresponsive correction of violation, improper operation or maintenance, and the economic benefit of non-compliance. Based on these criteria Ecology will determine the severity of each violation and determine appropriate actions to bring the Permittee back into compliance.

43. Dairy farming industry is not the same as it once was, farmers are stewards of the land.

Ecology Response:

Comment noted.

44. Cost burden of regulations will force farmers to sell their lands for urban development.

Ecology Response:

The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality. See the updated Small Business Economic Impact Statement for details on projected costs of permit compliance.

Ecology does not have the authority to prohibit farmers from selling their lands for urban development.

45. It is irresponsible for the Department of Ecology to bring on blanket regulations, regulations should be area specific.

Ecology Response:

While Ecology recognizes the value of individual permits, the agency does not currently have the resources to issue individual permits for the number of CAFOs within the state. Ecology uses general permits in instances where there is a general category or type of discharges, such as with CAFOs. Typically, general permits are more cost effective and allow for a large number of facilities to be covered rapidly under a single general permit, versus the costly and time consuming process of issuing multiple individual permits with similar discharges of process pollutants.

46. Draft regulations do not meet federal Clean Water Act regulations.
Ecology Response:
The CAFO permits have been developed to comply with legal requirements.
47. Proposed regulations have no teeth.
Ecology Response:
Comment noted.
48. Need to balance interest between farming and fisheries.
Ecology Response:
Ecology is dedicated to maintaining the highest possible water quality standards to insure the purity of all waters of the state (RCW 90.48.010). As a state agency, Ecology must work towards this goal through balancing the protection of the state's environmental resources, including fish and aquatic life, with the industrial and economic development of the state. The CAFO general permits are a tool that allows Ecology to work towards balancing the public interest to both protect the environment, and the right to continue to pursue the personal benefits of private property.
49. Dairy farms are being blamed for urban and suburban pollution.
Ecology Response:
Ecology recognizes that multiple industries and development processes across the state have all contributed to cumulative impacts in water quality. Ecology issues many general and individual permits to address different sources of discharges statewide to protect water quality.
50. The Department of Ecology lacks the agricultural expertise to adequately inform the CAFO permit.
Ecology Response:
Comment noted. While Ecology may not specialize in its expertise in agricultural practice, the agency specializes in water resources and quality. We have met with the WSDA, industry, and environmental interests while developing the CAFO permits to understand concerns and technical aspects of the industry. Additionally, Ecology held listening sessions, public workshops and hearings, and provided opportunities for public comment to receive additional input during the development process of the CAFO general permit.
51. Family farm is going out of business due to increasing regulations.
Ecology Response:
The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality. Ecology also recognizes that there are circumstances beyond the Agency's control and jurisdiction that have also resulted in unfavorable conditions for farmers to continue their operations.

52. Important to formulate policies that are proactive for environmental protection and mitigate impacts of climate change.

Ecology Response:

Ecology's duty is to maintain the highest possible standards to insure the purity of all waters of the state through the balancing of all beneficial uses while still providing for industrial development. This includes the need to balance environmental protection of the state's water resources and habitat with the industrial uses that benefit the state's economy.

The state only and combined permits are taking a more proactive approach to permitting that still meets legal requirements. Ecology is setting permit requirements in the permit instead of the nutrient management plan (developed by the CAFO) as is set out in the federal CAFO rules. This ensures a consistent set of permit requirements for all CAFOs that are easily accessible to interested parties.

Ecology's permitting process is largely dictated by legislation through the Washington Administrative Code, which does not currently include provisions for incorporating terms and conditions to mitigate climate change impacts through the issuance of general permits.

53. The real estate association has too powerful of a voice in land use decisions.

Ecology Response:

Comment noted. Ecology does not have authority over local land use decisions in regard to the CAFO permit.

54. The CAFO permit is a hazard to the future of farming.

Ecology Response:

Thank you for your comment.

55. Go back to the drawing board.

Ecology Response:

Thank you for your comment.

56. Let farmers farm.

Ecology Response:

Thank you for your comment.

57. Washington is losing farmland at an alarming rate.

Ecology Response:

Comment noted, local land use decisions are beyond Ecology's jurisdiction with regard to the provisions of the CAFO general permit.

58. Dairy industry under attack by special interest groups.

Ecology Response:

Thank you for your comment.

59. A clear concise and scientifically based permitting process consistent with other agencies is necessary to accommodate small local farmers.

Ecology Response:

The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality. The conditions in the permits are based on science and technical documentation. The bibliography of the permit Fact Sheet and of the Manure and Groundwater Literature review list the resources used in developing permit conditions. See the updated Small Business Economic Impact Statement for details on projected costs of permit compliance.

Ecology continues to coordinate with WSDA on CAFO permitting and believes that permit conditions should not cause large changes in producer's operations from current regulations so long as the producer has a good dairy nutrient management plan that has been kept up-to-date and implemented appropriately.

60. No permit is required.

Ecology Response:

Comment noted. The CWA requires permits for those operations that discharge to surface waters. State water quality statute (RCW 90.48) requires that a commercial or industrial operation which discharges to waters of the state obtain a permit from Ecology for the discharge.

61. Stricter animal per acreage limits are necessary.

Ecology Response:

Ecology does not have the authority under state or federal law to require a certain acreage per animal. Ecology has the authority to issue permits which address how the manure and other waste materials from animal production are managed to protect water quality.

62. Permit should not be required under assumption that pollution is occurring in all instances where a lagoon is utilized.

Ecology Response:

Ecology has determined that based on the preponderance of evidence that earthen lagoons have a seepage rate (between 500 and 5000 gallons/acre/day based on NRCS design criteria). Once lagoon seepage reaches groundwater it is a discharge of pollutants. Any person who conducts a commercial or industrial operation of any type which results in a discharge waters of the state, shall obtain a permit from Ecology (RCW 90.48.160).

63. CAFO permit is beneficial for shielding farmers from third party law suits.

Ecology Response:

The CAFO permits provide a consistent set of operating requirements that Permittees are required to maintain compliance with for the protection of water quality. If a Permittee is in compliance with their permit, they are protecting water quality and they are not subject to third party lawsuits.

Combined:

If a Permittee is not following the requirements of their permit, they could be subject to third party lawsuit under the Clean Water Act directed at bringing the Permittee back into compliance with their permit.

State Only:

See response to General Comments on the Draft CAFO Permits comment 37.

64. CAFO permit lacks requirements for changing manure waste management practices.

Ecology Response:

The permits set which manure management practices are considered protective of water quality. The Permittees must comply with permit requirements. If the Permittee is not complying with permit requirements, it must change its operations to be compliant with permit requirements.

65. Do not pass regulations.

Ecology Response:

Thank you for your comment.

66. More regulations only result in increased burden on farmers without addressing water quality issues.

Ecology Response:

Comment noted. The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality.

67. The current lack of regulation is a threat to public health and fisheries.

Ecology Response:

Comment noted. The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality.

68. The Department of Ecology's approach to the CAFO general permit contradicts the agency's efforts to establish the Puget Sound as a "No Discharge Zone".

Ecology Response:

Ecology's efforts to establish the Puget Sound as a "No Discharge Zone" pertains to the attempt to prohibit the dumping sewage and ballast water from marine vessels into the waters of the Puget Sound. This is an effort made by Ecology in accordance with Section 312 of the Clean Water Act, which states that the State cannot regulate sewage from vessels, except for in waters with a no discharge zone designation. This effort does not pertain to the permitted discharge of wastewater from regulated industries under National Pollution Discharge Elimination System (NPDES) program that are operating under an individual or general permit issued by Ecology.

69. Water quality impairment associated with CAFOs is illegal under state and federal water laws.

Ecology Response:

The CAFO permits do not authorize any discharge that would result in or contribute to a violation of water quality standards.

70. Dairy industry is a vital component of Washington's economy and food supply chain.

Ecology Response:

Ecology recognizes that the dairy industry is a vital component of Washington's economy. This is why Ecology has worked with industry representatives and the Washington State Department of Agriculture in the development of the CAFO permit to ensure the development of a permit that is both protective of the state's water quality and avoids overly burdensome costs associated with regulatory compliance.

71. Need to incorporate more discussion, study, and dialogue around the issues.

Ecology Response:

Ecology recognizes there is always the potential to gain more from additional discussions, studies, and dialogue regarding the issues revolving around our permitting processes. However, Ecology must balance the need to develop permits that adequately protect the state's water quality with the need to efficiently allocate limited resources and staffing availability to the development of each permit. The current permit reporting requirements will help inform permit conditions in future permits. Additional discussion, study, and dialogue proposals submitted to Ecology will be considered.

72. How does the permit attempt to safeguard against leakage due to increasing frequencies of 100 year rainfall events or spillage resulting from an earthquake?

Ecology Response:

See response to General Comments on the Draft CAFO Permits comment 19.

Discussions with industry indicate that most lagoons were built to meet NRCS design specifications. Concerns about how a lagoon based on NRCS design criteria will behave during an earthquake, and if earthquakes were considered when developing the design criteria should be directed to Washington State NRCS. In addition, local land use decision play a part in determining where lagoons are sited, which is beyond Ecology's authority to regulate.

Both of the CAFO general permit require that each permittee prepare and maintain an up-to-date manure pollution prevention plan (MPPP). The MPPP must be designed and implemented to limit the discharge of manure, litter, process wastewater, and other sources of pollution related to the operation of a CAFO to waters of the state for the purpose of complying with state water quality standards. Part of the MPPP is developing emergency procedures (one of which could be a lagoon breach, which is a possible outcome of an earthquake). Each permittee must develop emergency procedures in the event of a failure in its infrastructure that will direct the permittee's actions to prevent, control, or reduce discharges to surface waters.

73. CAFOs must accept costs associated with public health and environmental protection as a cost of doing business.

Ecology Response:

The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality. Ecology does not offer incentives for permittees to comply with permit conditions and therefore, a permittee seeking coverage under the CAFO permit must accept the costs of attaining coverage and the costs associated with compliance as cost of their industry operations.

74. The Department of Ecology does not have the resources to fully manage and enforce both state and combined state and federal permit options.

Ecology Response:

Comment noted. Ecology will be continuing to coordinate with WSDA on permit implementation.

75. Require equivalent adherence to Cow Palace Consent Decree as mandatory permit conditions in both state and combined permits.

Ecology Response:

. The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality.

76. Ecology must set numerical nitrate limits and enforce as a permit violation if the limit is exceeded.

Ecology Response:

The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality.

See response to special condition S4.J comment 1.

77. A 2013 EPA study linked CAFOs to groundwater contamination in Lower Yakima Valley, while 20% of wells for drinking water in Lower Yakima Valley are contaminated with excessive nitrates.

Ecology Response:

Comment noted. The study concluded that historic, and in some instances current, CAFO operations accounted for sixty-five percent of the contamination, attributing an additional thirty percent of the contamination to irrigation of croplands and three percent to residential septic systems. As statewide general permits, the CAFO permits ensure equal protection of water quality across the state.

78. Require all CAFOs to acquire individual NPDES permits, do not grant general permits for CAFO operations.

Ecology Response:

Ecology currently does not have the resources or staffing capacity to dedicate to permitting all CAFO operators within the state through the issuance of individual permits. Therefore, Ecology utilizes its authority to issue general permits when there is an industry with similar operational processes and waste products and a high volume of individual operators who will

need to seek coverage under a similar permit, such as the case with the CAFO general permits.

79. Allow county residents the right to view inspection reports.

Ecology Response:

All records and documents required by the CAFO permits are available for public review. This includes permit compliance inspection reports.

State Only:

Due to state laws (RCW 90.64.190, RCW 42.56.610, RCW 42.56.380, and WAC 16-06-210), some information on required permit records and documents will be provided in ranges to the requestor.

80. Do better.

Ecology Response:

Comment noted. While balancing the multiple interests of the general public is never an easy task, Ecology is always working to do better to improve water quality for all residents of the state.

81. Phase in compliance requirements over a longer period of time, allowing the time to more accurately assess water quality impacts.

Ecology Response:

Chapter 90.48 RCW requires that a commercial or industrial operation have a permit at the time that a discharge occurs. The CWA also requires a permit at the time a discharge occurs. There is no phase in time for the requirement to have a permit. The permits do provide a compliance schedule for certain requirements. These are the MPPP and Existing Lagoon Assessment.

The MPPP must be completed within 6 months of permit coverage. Discussions with industry representatives indicate that most (dairy) facilities have dairy nutrient management plans and are following them. The MPPP is a subset of the information required by a dairy nutrient management plan that describes how the Permittee is meeting permit requirements. If a producer has a good dairy nutrient management plan and is implementing that plan, Ecology expects that there should be minimal time needed to create a MPPP. Since the information from a good dairy nutrient management plan that is implemented is already available to the producer, much of the MPPP should be copy and paste from the existing plan.

Permittees have two years to complete the Existing Lagoon Assessment from the date of permit coverage for each of their lagoons. The assessment requires using NRCS Engineering Technical Note 23 to assess environmental risk from each lagoon. A Permittee who is going to NRCS for cost share for facility upgrades would have to complete this assessment prior to NRCS providing funding.

82. Coliform counts are higher in and around cities than they are around dairies.

Ecology Response:

Ecology recognizes that various industries across the state have the potential to impair water quality. Ecology utilizes its general permitting program to specifically identify the impacts to water quality attributed to each industry category and tailors each general permit in order to bring each industry category into compliance with state and federal water quality standards.

83. The option for a State Waste Discharge General Permit is a great addition.

Ecology Response:

Thank you for your comment, we are glad to hear the State Waste Discharge option for the CAFO permit is appreciated. The State Waste Discharge permit option is meant to accommodate CAFO operations that do not result in a direct discharge to surface waters and therefore do not require the additional coverage under an NPDES permit.

84. Concern of harassment due to public access to permit records.

Ecology Response:

All permit records related to a facility's compliance with permit effluent conditions are accessible to the public.

State Only:

A "range rule" applies for public record requests for facilities under coverage of the State Waste Discharge permit option. The "range rule" requires Ecology to provide a numeric range of herd stocks, field sizes, and manure generated in lieu of an actual counts. See also response to General Comments on the Draft CAFO Permits comment 79.

85. I have been complying with the dairy nutrient management program for years and have recorded water quality improvements in which the water now leaving my property is cleaner than it arrives.

Ecology Response:

It is encouraging to hear about cases of success that have been achieved as a result of the Dairy Nutrient Management Act, such as yours. Unfortunately, this is not the case for all CAFOs and some CAFO operations are still resulting in continued discharges to waters of the state. That is why the CAFO permit has been created, in order to assist all CAFOs in achieving the same success you have. If you have any additional information that has helped you achieve such results, Ecology would greatly appreciate having access to this information in order to further inform future developments of the CAFO general permit.

86. The CAFO permit is insufficient to protect waterways and the Puget Sound.

Ecology Response:

The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality.

87. The current permit lacks credible enforcement mechanisms.

Ecology Response:

The draft CAFO permits include the same enforcement mechanisms that all other general permits include. Ecology has the authority to enforce permit conditions through civil actions such as Administrative Order, and Penalty.

According to RCW 90.49.120, Ecology may send a notice of the department's determination that a violation has or will occur and require the permittee to submit a report of compliance with the determination, identifying how the permittee will act to control such pollution or comply with Ecology's determination, within thirty days of the receipt of notice.

Alternatively, Ecology may deem immediate action is necessary and may issue an order or directive, as appropriate under the circumstances, without first issuing a notice of the department's determination that a violation has occurred. Ecology reserves the discretionary enforcement capacity to also determine and issue a penalty in the amount of up to \$10,000 per day for every violation of the terms or conditions of a waste discharge permit issued pursuant to RCW 90.48.144, or 90.48.260, or for any person conducting a commercial or industrial operation or other point source discharge operation without a waste discharge permit as required by RCW 90.48.160 or 90.48.260. Ecology will determine the severity of a penalty based upon the nature of the violation and factor for the following criteria including, public health risk, environmental damage, willful or knowledge of the violation, responsiveness in taking corrective actions, operation, and maintenance conditions that resulted in discharge violation, and the economic benefit resultant of noncompliance.

88. Use strong limits for waste discharge and manure application in order to improve the health to the Puget Sound.

Ecology Response:

The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality.

89. The EPA is failing to implement the Clean Water Act.

Ecology Response:

The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements (including the CWA for the combined permit) and being protective of water quality.

90. Reduce and deregulate the environmental regulations on farmers.

Ecology Response:

Comment noted. The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality.

91. I oppose efforts to conceal conditions of the permit from the public.

Ecology Response:

All conditions that Permittees are required to comply with of both the state only and combined permits are publically available.

See also response to General Comments on the Draft CAFO Permits comments 79 and 84.

92. Adaptive management approach allows for perpetual non-compliance.
Ecology Response:
See response to special condition S4.K and S4.L comment 3.
93. Withdraw the current draft permit and reissue a draft that better protects human health and the environment while addressing and being informed by an environmental justice impact analysis.
Ecology Response:
The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality. While Ecology recognizes that there may be prior existing conditions that have resulted in adverse impacts to water quality in some communities, an environmental justice impact analysis is beyond the scope of the current CAFO permitting process. Ecology does not have authority to include additional permit requirements for a specific area of the state based on environmental justice. The permits protect water quality across the state for all parties equally.
94. Quantify the degree to which atmospheric emissions from large and medium CAFOs impact State waters and address greenhouse gas emissions.
Ecology Response:
Ecology does not have authority to address air quality through a water quality permit. Chapter 90.48 RCW and the CWA do not provide air quality authorities.
95. The Department of Ecology is overreaching its authority.
Ecology Response:
Both the CWA and chapter 90.48 RCW require that a facility obtain a permit if there is a discharge to water. Ecology is the delegated permitting authority in Washington is issuing permit to comply with these requirements.
96. If farmers are polluting ground and surface water, then the NRCS, WSDA, EPA, and the DOE are all to blame for their role in advising and influencing current farming practices.
Ecology Response:
Comment noted.
97. Utilize more quality control officers in the field with the authority to levy fines on permit offenders. Ecology should enforce against CAFOs more.
Ecology Response:
Ecology administers and enforces the CAFO permits in coordination with WSDA who are the primary field presence for the CAFO permits. While we would like the ability to utilize more quality control officers in the field, at this time Ecology lacks the staffing personnel and resources to dedicate to increasing our field presence.

Where enforcement action is necessary, Ecology will determine the approach it takes on a case-by-case basis.

98. Blanket regulations undue because of the actions of one to two percent of farmers.

Ecology Response:

While the CAFO permits apply state wide, a permit is only required if the facility has a discharge. If the facility does not discharge, no permit is required.

99. CAFO permit is narrow sighted and damaging to continued existence of small dairies in Washington State.

Ecology Response:

The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality. See also response to General Comments on the Draft CAFO Permits comment 29.

100. CAFOs are in conflict with existing senior water rights in the Yakima Basin through compromising the water quality of senior user's allocated water supply. The further impairment of water quality by CAFOs result in additional loss of previously allocated water rights and constitutes a regulatory takings.

Ecology Response:

Comment noted. It is beyond the scope of the CAFO permits to regulate water supply.

101. If costly regulations are enacted many disadvantaged Hispanic employees will lose their jobs.

Ecology Response:

The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality.

102. CAFO permit will result in the collapse of Washington's dairy industry, analogous to the demise of logging communities due to regulations enacted due to the spotted owl.

Ecology Response:

Comment noted. The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality.

103. The Department of Ecology has proven an increase in wetland habitat and in-stream flows as a result of land stewardship associated with sustainable farm practices.

Ecology Response:

Ecology recognizes that in some instances sustainable farm practices have resulted in improved riparian and wetland habitat conditions under the stewardship of farmers. However, not all CAFO operators currently utilize such practices that result in these beneficial gains in habitat conditions.

104. Dairies support more wildlife than other alternative crop farms can.

Ecology Response:

Comment noted. Supporting more diverse wildlife does not negate the fact that improperly managed manure from CAFOs can result in, or contribute to impacts to the state's surface and ground water quality from discharges.

105. The Department of Ecology's inspections are less stringent and more facility oriented than existing WSDA inspections.

Ecology Response:

Comment noted. As part of the implementation of the CAFO permits, Ecology intends to cross train with WSDA staff so that there is a common understanding of permit requirements. Additionally, WSDA will be the primary field presence for implementing the CAFO permits.

106. Loss of dairies likely to have unintended consequences.

Ecology Response:

Comment noted. The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality.

107. There is a potential Treaty Rights implication for a permit system that fails to consider the relationship between ground and surface water.

Ecology Response:

See responses to special condition S1.A comments 1 and 2, S2.A comments 9,

108. Support the use of public monies to assist farmers to make necessary changes to implement AKART, such as anaerobic digesters or other viable solutions to protect ground and surface water quality.

Ecology Response:

While there are other entities and organizations that offer cost sharing programs, Ecology does not utilize publically allocated monies for permittees to adhere to regulatory conditions or for permit compliance. Furthermore, permit compliance costs are considered to be a cost of doing business and it would not be appropriate for Ecology, as a public agency, to allocate funding that would result in a gain for private entities.

109. The CAFO permit is a redundant, nonsensical power grab on behalf of the Department of Ecology.

Ecology Response:

Comment noted. The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality. Both the CWA and chapter 90.48 RCW require that an operation obtain a water quality permit from Ecology for discharges to water regardless of what other requirements the operation must comply with. Ecology is the delegated water quality permitting authority in Washington.

110. Oceans are changing faster than anticipated and increasingly becoming inhospitable to life. This issue is further compounded by decreased levels of oxygen as a result of nutrient run-off from farming and climate change. The current permit circumvents the impacts CAFOs have upon marine ecosystems.

Ecology Response:

Comment noted. Ecology is tasked with the responsibility of balancing the need for environmental protection with the beneficial uses of the state's water resources, including uses for industrial purposes. The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality.

111. Do away with fines imposed on dairies.

Ecology Response:

Under the provisions of the State Water Pollution Control Act, Ecology reserves the ability to hold any individual liable for any violations pursuant to chapter 90.48 RCW, and issue civil penalties in association with such violations in an amount of up to \$10,000 per discharge, per day for every such violation (RCW 90.48.144). Ecology issues these fines in the form of appealable civil penalties to account for damages resulting from water quality violations.

112. Small farms enrich ecosystems, economies, and culture. The loss of farms as result of regulatory cost burdens would have unintended consequences.

Ecology Response:

Comment noted. Ecology is tasked with the protecting the state's water quality through maintaining compliance with state and federal water quality standards and preserving the balance of beneficial uses of the state's water resources. The CAFO permits have been developed to minimize compliance costs while still complying with legal requirements and being protective of water quality.

113. Need to put CAFOs to a stop and require a transition to biodynamic and organic farming methods and establish animal rights guidelines for all concentrated animal farm operations. Ecology should ban CAFOs and the forced use of animals for the production of animal based products.

Ecology Response:

It is beyond the Ecology's authority to ban CAFO operations, establish animal rights guidelines, or to require CAFO to change to a completely different method of production.

114. Thank you for your work to protect clean water resources for all Washington residents.

Ecology Response:

Thank you for your comment. Ecology works hard to protect the state's water quality while balancing all beneficial uses of the state's water resources.

115. There is no look at how the environment will be impacted by housing development.

Ecology Response:

The approval of housing developments remain under the authority of counties and local municipalities. This process is beyond Ecology's jurisdiction with regards to the provisions of the CAFO general permit.

116. Nitrate contamination relates to historic overuse of commercial fertilizer more than manure.

Ecology Response:

Ecology recognizes that there is a range of circumstances that have resulted in high nitrate levels within the state's water resources. However, it is Ecology's responsibility to ensure compliance with existing state and federal water quality standards. Both the CWA and chapter 90.48 RCW require that an operation obtain a water quality permit from Ecology for discharges to water.

117. Ecology should develop an alternatives analysis to go with the permit which includes The Farm Act and be done by a professional engineer.

Ecology Response:

An alternatives analysis is not required as part of permit development. The analysis that is required is the Small Business Economic Impact Analysis which does require Ecology to mitigate for undue impacts on small businesses.

118. Why don't other permits like municipal sewage treatment plants have limits on nitrogen?

Ecology Response:

Other permits do have limits on nitrogen or other pollutants that are part of a facilities discharge.

119. Promulgate clean air rules for CAFOs to reduce greenhouse gas emissions and climate change impacts. Address air emissions and greenhouse Gas emissions

Ecology Response:

Comments noted. It is beyond the scope of development of a water quality permit to be able to address clean air rules.

120. The CAFO permits cause a risk of conversion of farmland to other uses.

Ecology Response:

Development and conversion of farmland to other uses is a local land use decision. See also General Comments on the Draft CAFO Permits comment 34.

COMMENTS ON THE DRAFT FACTSHEET

Commenters:

<ul style="list-style-type: none"> • Agri Beef Co. • Center for Food Safety • David Van Cleve • Dean & Martha Effler • Dena Jensen • Dennis Michelson • Dennis Nicholson 	<ul style="list-style-type: none"> • Environmental Engineering Associates • Mensonides Dairy, LLC • Ron Reimer • Ruth DeBoer • Senator Warnick, 13th Legislative District • Tony Viega 	<ul style="list-style-type: none"> • Van Berkum & Sons Dairy • Washington Farm Bureau • Washington State Dairy Federation • Western Environmental Law Center • Yakima Valley Dairy Federation
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Range of Comments:

1. Darcy’s Law

- The lagoon narrative on lagoon seepage (pages 32-33) is missing references or discussion on Darcy’s law/equation in relation to soil water movement in unsaturated soils (<http://www2.nau.edu/~doetqp-p/courses/env320/lec10/Lec10.html>).
- The lagoon seepage discussion in the fact sheet leaves the impression that soil water only moves down and only according to Darcy’s law. Hydrogeologists indicate moisture flux/movement changes in the vadose zone, and Darcy’s law formula must be modified based on soil moisture and soil texture in the unsaturated zones under the saturated liner.
- The reference to Darcy’s law on page 68 regarding lagoons also indicates a seepage rate. The seepage rate often referenced by Ecology staff and examples used (such as Ham) are the calculated rates for the saturated zone of the clay liner. It is our understanding that water flux is different in the vadose zone as compared to the more impervious but saturated clay liner. We also question the fate of nutrients, especially nitrogen. Evaluations, studies, and data indicate the conversion, fate, and transport of nitrogen is significantly reduced by conversion to N₂ gas via combined nitrification-denitrification or anammox (S. Baram at <http://www.ncbi.nlm.nih.gov/pubmed/23099954>).

Ecology Response

Darcy’s Law describes the flow of fluid through a porous medium. The equations were established based on saturated flow conditions but it can be adjusted to account for unsaturated flow as well. In the case of measuring seepage from a lagoon, saturated conditions exist because the contents of the lagoon create saturated conditions and the pressure head causes a discharge from the lagoon.

Water that discharges to the vadose zone beneath a lagoon is considered a discharge to ground. Since that water cannot be used by plants then eventually migrates vertically to groundwater, it is considered a discharge to groundwater. The time it takes to reach groundwater depends on a number of factors, but the water will eventually reach groundwater.

Ecology is considering the seepage that occurs from a storage lagoon. Water in the lagoon creates saturated conditions. If the lagoon is completely emptied and allowed to dry, then this could impair the integrity of the liner causing a greater permeability when the lagoon is re-filled.

Baram (2012) makes several conclusions at this site about nitrogen reductions looking at the vadose zone, the area near the banks of the lagoons and the area underlying the waste lagoon. Results vary based on these different locations. Overall the authors conclude the following: 1) coupled nitrification-denitrification can cause substantial reduction in N mass, 2) while nitrogen was reduced, the average groundwater nitrate concentration under the lagoon was 71 mg N/L which was 3.5 times higher than the average concentration in regional groundwater, and 3) water quality in the vadose zone and in groundwater indicate that leachates from the waste lagoon have reached the groundwater (pg 1630).

2. Nitrogen is non-existent in some cases (Ericksen, Sheridan Lagoon evaluation at <https://fortress.wa.gov/ecy/publications/SummaryPages/92e24.html>), or nitrates are stored in shallow soil vadose layers immediately under the liner (Haak Dairy soil test data, attached).

Ecology Response

Ecology is basing permit requirements on a preponderance of evidence. The literature review (Redding, 2016) reviewed 17 research sources of groundwater impacts from manure lagoons. Only one of those studies indicated no impacts to groundwater from 1 of the 4 lagoons monitored. Erickson (1994).

3. The reason we focus a bit of time on these two questions (Soil water movement and fate of nitrogen) is historical recommendations by Ecology staff with a bias towards double synthetic liners. This preference is expressed in the literature review and in reports by Ecology staff (Kimsey 2002). Yet, there are two reports of synthetic liners that failed in Whatcom (pers. comm. Chris Clark, P.E. at Whatcom Conservation District). There is also data on a decommissioned lagoon in Yakima that indicate little to no transport of nitrate beyond shallow layers of the vadose zone. (See attached Haak Dairy soil tests.) These results match results of other studies showing clay liners are effective. (See http://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=1263&context=abe_eng_pubs.)

Ecology Response

Kimsey (2002) addresses lagoons constructed below the seasonal high water table. When a lagoon has no vertical separation between the bottom of the lagoon and the top of the water table, the unsaturated zone which provides attenuation and destruction of pathogens is missing. This scenario creates a direct discharge of pathogens to groundwater where they can remain viable for long periods of time and distances.

The Manure and Groundwater Literature Review summarizes what is published in the literature. This document describes NRCS standards, soil liners, permeability, manure sealing, minimum vertical separation, soil properties, seepage rates, and sidewall seepage. The focus is on liner permeability rather than materials. Tables 17 and 18 describe soil permeability characteristics. This document summarizes several publications that describe the advantages of all types of lagoon liner material. NRCS (2009b) describes clay liners, flexible membrane liners and geosynthetic clay liners. Nicholson et al. (2002) evaluates and rates 5 different storage facility types. MPCA (2001) monitored environmental improvements associated with a geosynthetic clay liner, and the addition of a filter strip. Double synthetic liners are discussed as an option when environmental conditions are substandard.

Synthetic liners (as with any liner) require proper care, operation and maintenance. The discussion in the fact sheet is describing the properties of a non-discharging storage lagoon.

Ecology is held to credible data standards for making policy decisions. The submitted data do not include the associated information for us to classify this information as credible.

4. Soil liners appear to be the better technology for farms. Thick layers of clay resist mechanical damage. Unlike plastic, soil does not bubble up from gas (as the Whatcom liners are reported to have done), and soil is not susceptible to tearing like plastic or cracking like concrete. Ecology staff have indicated in public meetings that seepage rates for soil liners do not automatically equate to a discharge. Science such as the study by S. Baram (<http://www.ncbi.nlm.nih.gov/pubmed/23099954>) supports that conclusion, but it also shows that a saturated liner that provides some moisture to the immediate vadose zone is essential to reducing ammonium nitrogen to inert nitrogen gas. Soil-lined lagoons have provided an important tool and recommended tool for farms to improve overall farm management, and they have resulted in improvements in surface and groundwater quality. (See study conclusions by Erickson in this study by Ecology: <https://fortress.wa.gov/ecy/publications/documents/0203002.pdf>.)

Ecology Response

Baram(2012) concludes that seepage from the waste lagoon have reached groundwater with average concentrations under the lagoon of 71 mg N/L, which are 3.5 times higher than the average concentration in regional groundwater.

Erickson and Matthews(2002) concludes that winter storage provides a benefit in lieu of year round application. Ecology agrees that lagoons are an important part of the manure treatment and storage at a CAFO.

5. RCW 90.48.450 requires Ecology to minimize the possibility that its actions will contribute to the conversion of agricultural lands to nonagricultural uses and to ensure that agency regulations are consistent with the Legislature’s intent at the passage of RCW 90.48.450. Permits are an overregulation. The mandatory nature of these permits raises significant questions of agency authority. With the proposed permits, particularly the mandatory nature of the permits, the Department of Ecology exceeds its statutory authority. See RCW 43.21A.080 below [Text Omitted]. 34.05.570(2)(b)(ii)(c) provides that “In a proceeding involving review of a rule, the court shall declare the rule invalid only if it finds that: The rule violates constitutional provisions; the rule exceeds the statutory authority of the agency; the rule was adopted without compliance with statutory rule-making procedures; or the rule is arbitrary and capricious.”

Ecology Response:

Permits are not mandatory. A permit is only required if there is a discharge to waters of the state.

RCW 90.48.450 requires that enforcement actions give consideration to whether the enforcement action would contribute to conversion of land to nonagricultural use. A permit is not an enforcement action. However the requirement to obtain coverage under a permit may

be the result of an enforcement action. Ecology has attempted to minimize costs associated with permit compliance while still complying with statute and rule requirements for protecting water quality.

A permit is also not a rule, and therefore neither RCW 43.21A.080 nor 34.05.570(2)(b)(ii)(c) apply.

See also responses to Comments on the Small Business Economic Impact Statement comments.

6. RCW 90.64.020 prohibits the Department of Ecology from requiring a permit for any animal feeding operation unless Ecology first determines that the operation “is a significant contributor of pollution to the surface or ground waters of the state” and only after “the director has conducted an on-site inspection of the operation and determined that the operation should and could be regulated under the permit program.”

Ecology Response:

The CAFO permits do not designate dairies to be significant contributors of pollutants. This statute aligns state requirements with federal CAFO rule requirements surrounding small CAFOs - determination that a discharge is a significant contributor of pollutants before designating a small facility to be a CAFO and requiring the facility to obtain permit coverage. Additionally, RCW 90.48 requires that any commercial or industrial operation obtain a permit for a discharge regardless of whether the discharger is a significant contributor of pollutants.

7. The Washington Court of Appeals found Ecology’s solid waste rules to be outside the authority of state law with regard to regulation of animal nutrients. The court held that “agricultural manures used in agricultural operations are not ‘waste’ because they are still intended for use,” and “Accordingly, we interpret the statutory definition of ‘solid waste’ to exclude agricultural manures used for agricultural purposes” *Littleton v. Whatcom County* (121 Wn. App., 2004).

The court said “*if chicken manure used for agricultural processes is solid waste requiring a solid waste handling permit, farmers across the state who currently use manure as fertilizer are criminally liable for operating without a permit. The legislature could not have intended this consequence*” and state law “*does not authorize the DOE to include agricultural manures used for agricultural purposes in the definition of solid waste.*”

Ecology has now shifted its attention to RCW 90.48.160 (a 1955 statute not amended since 1989) as newly found authority for the state law portions of the proposed permits. Ecology’s “Fact Sheet” states: “RCW 90.48.160 requires that any *commercial or industrial operation* which causes *waste material* to enter a surface water or ground water of the state (i.e. a discharge) must have a permit from Ecology” and “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).”

Ecology's restatement inaccurately claims that nutrients used for agricultural purposes are "waste" covered by this statute. As in *Littleton*, Ecology's errant legal reading reaches beyond the agency's authority.

RCW 90.48.160 is a legally inappropriate authority for the proposed state permit (and the state portion of the combined permit). RCW 90.48.160, regarding "*waste disposal* permits," applies only to "any person who conducts 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*" RCW 90.48 does not define waste or solid waste.

The court pointed out in the *Littleton* case that, in 1970, the Legislature removed the word "manure" from the definition of "solid waste." (See definitions in RCW 70.95.030).

The Legislature was additionally clear in their intent not to include manure in the definition of "solid waste" by specifically exempting "unmanipulated animal manure" from the "solid waste permit requirements" (see RCW 70.95.205 and RCW 70.95.030). Since the Legislature has specifically and deliberately excluded animal manure from the definition of solid waste, the Department of Ecology lacks authority to mandate application for a waste disposal permit under RCW 90.48.160.

Unless Ecology can provide adequate *statutory* authority, any Ecology state waste permit (or state ground water protection provision in a combined permit) related to agriculture should be optional only and not mandatory. To require a dairy or other AFO to get a concentrated animal feeding operation permit, Ecology must first conduct "an on-site inspection of the operation" and determine the operation "should and could be regulated under the permit program" because the operation is in fact "a *significant contributor* of pollution to the surface or ground waters of the state." See RCW 90.64.020.

Ecology Response:

RCW 90.48.160 requires that a commercial or industrial operation obtain a permit for its discharges. The exemption the comment refers to in RCW 70.95.205 as applied to agricultural wastes is for an exemption from the requirement to obtain a solid waste handling permit.

Ecology has focused the permits on discharges to waters of the state which includes both surface and groundwaters. Water quality permits are intended to ensure that discharges do not cause or contribute to violations of water quality standards. This necessitates control of the sources of discharges to prevent water quality violations.

Manure, litter, and process wastewater are the sources of pollutants on CAFOs. In order to prevent discharges that cause water quality violation, it is necessary for the permits to control when, where, and how manure, litter, and process wastewater are land applied.

6. Factsheet omits reference to *CARE v. Cow Palace*

Ecology Response:

CARE v. Cow Palace was a case decided under the Resource Conservation and Recovery Act (RCRA), not the Clean Water Act. The permits were developed under the requirements

of the federal Clean Water Act and state Water Pollution Control Act. Ecology included the District Court's decision in Cow Palace in the Bibliography, as it was reviewed as part of the permit development process.

7. Why was a discussion of the regulatory history and accomplishments of the DNMP left out of the Regulatory background/Case law section of the Fact Sheet?

Ecology Response:

This section of the Factsheet specifically deals with permitting history and case law related to Ecology's CAFO permit authorities. While the DNMP is involved, chapter 90.64 RCW and its implementation do not directly related to interpretation of permitting authorities.

COMMENTS ON THE SMALL BUSINESS ECONOMIC IMPACT STATEMENT

Commenters:

<ul style="list-style-type: none"> • Agri Beef Co. • Allan & Jo Ann Thomas • American Farmland Trust • Andrew DeHaan • Beavermarsh Farm, LLC • Bovine Drive, Inc • Center for Environmental Law and Policy • Cory Kuipers • David Van Cleve • Dena Jensen • Dennis Nicholson • Dr. Joe Harrison, WSU Puyallup Extension • Duane Forester • Environmental Engineering Associates • Friends of Toppenish Creek • Green Acres Dairy • Jeff Rainey • Jim Dyjak 	<ul style="list-style-type: none"> • Jim Hansen • Julienne Loveall • Karen Steensma • Kevin Coyne • Lagerway Dairy • Larson Dairy • Lee Bode • Lummi Indian Business Council • Lummi Nation • Margie Van Cleve • Mensonides Dairy, LLC • N3 Consulting • Natural Resource Conservation Service • Noah Bartz • Northwest Indian Fisheries Commission • Oxbow Dairy • Pomeroy Dairy, LLC • Rebecca Canright • Riverbend Dairy, Inc 	<ul style="list-style-type: none"> • Rodgers Engineering • Ruth DeBoer • Senator Warnick, 13th Legislative District • Steensma Dairy • Storm Haaven Dairy • T Bar T Farms, Inc • Tim Van Hofwegen • Tony Viega • Turner & Co. • Van Berkum & Sons Dairy • Veen Huizen Farms, LLC • Vreugdenhil Farms • Washington Farm Bureau • Washington State Dairy Federation • Western Environmental Law Center • Wil-O-Acres Goat Dairy, LLC • Yakima Valley Dairy Federation
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Range of Comments:

1. Your figures are somewhat low. My initial calculations show \$750M to \$1B just in the greater Yakima basin area.

Ecology Response:

Comment noted.

2. Inappropriately narrow focus did not consider cost share opportunities provided by NRCS and others.

Ecology Response:

The Waste Discharge General Permit Program rule (Chapter 173-226 WAC) sets requirements for the Economic Impact Analysis (EIA) issued with draft general permits, in section WAC 173-226-120. An EIA is required for all general permits intended to directly cover small businesses.

The purpose of the EIA is to reduce the economic impact of compliance with the general permit on small business by doing one or more of the following, when it is legal and feasible:

- Establishing differing compliance or reporting requirements or timetables for small businesses.
- Clarifying, consolidating, or simplifying the compliance and reporting requirements under the general permit for small businesses.

- Establishing performance rather than design standards.
- Exempting small businesses from parts of the general permit.

The requirements for the EIA are similar to the requirements for the Small Business Economic Impact Statement (SBEIS; set by the Regulatory Fairness Act, Chapter 19.85 RCW) to identify and mitigate disproportionate impacts of compliance costs. Similarly, the rule also identifies a baseline of laws and rules with which permittees must comply regardless of the content of the general permit:

- The costs necessary to comply with chapters 173-200, 173-201, 173-204, and 173-224 WAC. These are various water quality standards.
- The costs associated with requirements of the general permit which result from conformity or compliance, or both, with federal law or regulations.

Beyond this similarity with the SBEIS, the EIA differs significantly from the type of analysis required for rulemaking (found primarily in the Cost-Benefit Analysis and Least-Burdensome Alternative Analysis required by the Administrative Procedure Act, Chapter 34.05 RCW). This means the following types of impact are *not* considered as part of the EIA:

- Benefits or costs of environmental, health, or other improvements as a result of compliance.
- Indirect impacts of compliance costs, such as reduced input purchases or changes to market prices.
- Impacts to public and not-for-profit parties.
Impacts to jobs statewide.

3. Fall and spring soil tests: Reports from various sources indicate the test lab fees in the EIA are 50% too low. A check with regional soil labs on test costs will clarify these costs.

Ecology Response:

Ecology used the lab analysis fees provided by well-known industry consultants in Whatcom and Yakima counties as the basis for the cost analysis for soil sampling.

4. Prevent direct animal contact with water (page 15 condition S4.E.): The language in the draft is a change from federal EPA language and different from the Idaho permit used as one of the EIA baselines. See https://www3.epa.gov/region10/pdf/permits/npdes/id/cafo_fp_idg010000_wapps.pdf. Specifically, the EPA, Idaho, and Oregon permits say animals in confinement areas may not have contact with waters of the US. This is the EIA baseline, and it is also required for compliance under RCW 90.64. However, the draft language on page 15, while confusing, indicates that (all) livestock must not come in contact with surface water or conduits. It does not say confined livestock, so all livestock must be restricted from access to any land that might be “waters of the state” or land that is a “conduit to surface waters.”

This change must be analyzed. It is difficult for us to calculate the losses because of the uncertainty between waters of the US and waters of the state, but costs must be estimated for farmers who, under the draft permit, could no longer use pasture land with dry/seasonal ditches, swales, gullies, depressions, historically pastured seasonal “wetlands,” hillsides or fields with slopes, or anything that could drain to “waters of the state.” The cost of rebuilding

fences alone could range from thousands of dollars for small farms to hundreds of thousands of dollars for larger farms.

Ecology Response:

40 CFR § 122.42(1)(e)(iv) requires that animals be prevented from contact with surface water. It does not specify if the prevention is for the production area or land application fields. Ecology takes this requirement to refer to both the production area and land application fields. Ecology has modified the requirements related to preventing animal contact with water to account for pastures and grazing. See response to special condition S4.E comments.

5. No analysis was done on the cost to develop this MPPP. Conservation District planning staff should be able to help estimate costs of this action.

Ecology Response:

Based on discussion with industry representatives, it was presented that all dairy producers have a dairy nutrient management plan and are implementing those plans. Based on these discussions Ecology concluded that many of the elements required by the MPPP are already developed and that a Permittee would be able to copy and paste the necessary information thereby greatly reducing the time cost of MPPP development. A comparison of chapter 90.64 RCW (current) requirements and permit requirements was included in the updated economic impact assessment.

6. Comment –CAFO owners/operators will likely want to know the costs associated with the permit (immediate and annual).

Ecology Response:

Comment noted. Permit fees are not required to be included in economic analysis, however Ecology did include permit fees in the initial and final economic impact assessment. The permit fee schedule may be found here: <http://apps.leg.wa.gov/WAC/default.aspx?cite=173-224>

7. Lagoon capacity will be affected by new limits in the permit on timing of application: The EIA does not analyze costs because of inaccurate assumptions, as demonstrated by this statement: "...industry representatives indicate that there is adequate storage...." Farms today generally have adequate storage for normal years, but storage systems must be able to handle anomalous challenges such as wetter years, like the La Niña pattern years of 2010-2012 which were marked by late and very wet spring weather. The exceptionally wet springs of 2011 and 2012 pushed storage systems to their capacity. The permit draft has new restrictions on applications. (See S4.J.7 regarding the restricted applications after October 1, no applications to bare soil until within 30 days of planting, etc.) These restrictions will result in the need for producers to add storage to store manure longer. The costs associated with building additional storage were not included in the EIA. A call to any conservation district or NRCS office that has recently calculated storage needs and helped design and install storage will give Ecology staff an accurate assessment of additional storage needs as well as current capital cost of storage systems. We will not be surprised if the added storage increases capital costs more than \$500,000 per farm.

Ecology Response:

Comment noted. Ecology has not assessed the cost of constructing a new lagoon because Ecology is not directly requiring such actions. Additionally, if a lagoon is appropriately sized, the sizing should have accounted for variations in weather conditions that may occur such that the operation will maintain compliance with current regulations and the CAFO permit in the future if the operation is covered due to a discharge.

8. Run-off Reduction and Prevention

- Ecology made an erroneous assumptions. Page 8 of SBEIS says fertilizer can be applied to land in buffer zones...Yet page 27 of the draft permit says "...no other source nutrients" may be applied in buffer/setback zone.
- There are several areas in the state where the 35-foot vegetated buffer or 100-foot setback would reduce available land application acreage by as much as 40%.
- The proposed setback/buffer would inhibit the use of private property and reduce farm productivity. Ecology has not demonstrated that the setback/buffer is tailored to site-specific conditions.
- Crop production losses from no nutrient application areas: The new "no nutrient application" language on page 27 of the draft permit prohibits all nutrient sources. Assuming crop production is uneconomical without fertilizer, we estimated crop-loss costs for an example farm in both eastern Washington and western Washington. A 1,000-acre eastern Washington farm with a typical corn/triticale rotation yields average feed production valued at \$1,850 per acre. If we assume a 10% crop loss due to the current wording that restricts nutrient application to land adjacent to any "waters of the state," our estimate of just crop loss is \$185,000 per year.

A 300-acre western Washington farm with 10% loss of corn due to no fertilizing within 100 feet of any waters of the state equals lost production of \$36,000/year. Given the uncertainty of what Ecology considers "waters of the state" versus "waters of the US" and given statements (see Whatcom hearing statement by Jon Jennings) that dry ditches (and, we assume, streams, swales, and wetlands) are "waters of the state," we know many farms will incur a much more than 10% loss of use of farmland. Some Skagit farms report that, given the drainage system of ditches, the resulting production losses will occur on 50-66% of their land. We have no idea how a family could continue dairy farming under this permit condition. Your economic staff should consult with several different farms in different locations for a more accurate estimation of land and crop losses.

The analysis also failed to account for the cost to move manure fertilizer to other fields or purchase land to restore nutrient balance and feed production capacity (if available). This factor will add huge capital costs to farms to replace the lost use of the newly required buffered areas. Both RCW 19.85 and WAC 173-226-120 require analysis on changes from existing requirements as written in this draft. Later in these comments, we propose policy "alternatives" to the current language.

However, currently there is no requirement to not use these lands or applying nutrients on these lands. The current requirement is to not get manure, litter, or nutrients in the water. Changes must be assessed in the EIA.

- Another factor relating to the second item discussed below { 100' buffer proposal - which is actually double that as it extends to both sides of the subject water) that will have an almost unbelievable economic impact is the amount of land removed from production should this requirement prevail as proposed. I contacted several experienced, local, farm specialist realtors to get prices of recent sales for good, irrigated Yakima County land. You will be shocked to learn there was a sale recently of a well- known vineyard (wine grapes) at \$59,000.00 Per Acre! Average farm irrigated by pivot field and row crop land is selling for \$14-16,000/acre on average. There is a sale in 2015 for a tract like this in southern Franklin County at \$23,000 per acre (buyer was the State of Washington/DNR). Given land values like this, and the nature of the open irrigation ditch for water delivery, alone with drain systems and natural waterways, and all of a sudden we are looking at tens of thousands of acres effectively removed from production. This proposal would be in effect a "taking" of that land by regulator fiat, and would have a value well in excess of 1 BILLION DOLLARS. Think of it this way; just 17 acres at \$59K per is \$1 million dollars at the low end it's just 71 and a half acres to reach a million dollars Please go back, check your methodology and math and produce a more realistic number.

Ecology Response:

Ecology is not restricting the use of commercial/chemical fertilizers in the permits.

Combined:

Ecology has used the minimum buffers included in the federal CAFO rules as required by 40 CFR § 412.4(c)(5) and has added the option to use appropriately sized and constructed berms as an additional option beyond the federal requirements.

State Only:

Ecology has not specified what buffers, setbacks, or other technology or BMPs must be used. The basic requirement is that the Permittee may not discharge to surface water from its land application fields. See response to special condition S4.N comments.

9. Externalized Economic Impacts

- EIA is one sided, only considering the costs to producers. It does not account for lost opportunity costs associated with impaired beneficial uses of state waters (e.g. shellfish harvesting, recreation, drinking water, etc).
- Costs to the public from dairy pollution of groundwater and surface water are not described in Ecology's analysis of the problem. These costs are significant.
- Ecology's economic impact analysis fails to consider the economic impacts of unregulated and under-regulated CAFOs on natural resources, downstream uses, and the environment generally.
- Econ analysis omits significant information and overstates the costs of complying with the permit (1) Doesn't include costs to community, (2) Doesn't include costs of impacts to other beneficial uses, (3) Doesn't include cost of cleaning up groundwater.
- Ecology's analysis is based solely on the economic impact to small CAFOs and otherwise fails to consider the economic and environmental impact to other downstream uses. Moreover, DOE has not determined that smaller animal numbers necessarily represent a decreased risk of discharge; 14 instead DOE proposes to exempt facilities purely as "mitigation." This is a windfall to small dairies - not mitigation. The decision to provide a

special exception to small dairies should be revisited to include a more thorough analysis of the risks and environmental and economic impacts, including those that are cumulative, to downstream uses.

Ecology Response:

See response to Comments on the Small Business Economic Impact Statement comment 2.

10. Significant Contributor

- Ecology's analysis is based solely on the economic impact to small CAFOs and otherwise fails to consider the economic and environmental impact to other downstream uses. Moreover, DOE has not determined that smaller animal numbers necessarily represent a decreased risk of discharge; instead DOE proposes to exempt facilities purely as "mitigation." This is a windfall to small dairies - not mitigation. The decision to provide a special exception to small dairies should be revisited to include a more thorough analysis of the risks and environmental and economic impacts, including those that are cumulative, to downstream uses.

Ecology Response:

If small dairies are determined to be significant contributors, they are required to obtain a permit. See response to special condition S1 comment 4 and S2.A comments 2 and 4.

11. Lagoon Liners

- The economic impact to dairies of installation of a double liner system with leak detection is significant.

Based on data collected from 3 dairies that had installed single layer liners to their lagoons, the price ranged from \$ 15 to \$ 62 to \$333 per cow, and was dependent on how much retrofitting was required in terms of engineering, manure removal, and dirt work. These numbers would need to be multiplied by a factor of 6.5 for installation of a double-liner system and leak detection.

Below is a table that serves as a reference for minimum costs of liner installation based on materials and installation only. The costs in the table would need to be adjusted up based on the amount of expense involved with retrofitting to an existing lagoon. Estimates for retrofitting could run as much as \$300 per cow.

Western Washington – Lagoon Liners
(a bit more water to handle)

Size of Dairy (cows)	Single Liner	Double Liner with Leak Detection (6.5 multiplier)
500	\$26,130	\$ 169,845
1000	\$52,272	\$ 339,690
2000	\$104,544	\$ 679,380

- In addition, since a majority of the current basins are not lined with synthetic or geosynthetic liners, the cost to dry down, clean out and re-compact, install venting systems and liners has also been likewise grossly underestimated. We have current costs as a number of basins were installed in 2015 and early 2016, please let me know if you want

to see those current/real cost figures, which vary depending on the basin size and other factors.

Ecology Response:

Ecology is not, and never did propose requiring that lagoons be lined with a synthetic liner. We have stated that a double synthetic lined lagoon with leak detection between the layers is the standard (assuming correct installation and maintenance) at which Ecology would agree that such a lagoon seeping at such a small amount that it is not discharging.

12. Lagoon Assessment

- The average dairy in Yakima has 3 such basins. Since ECY estimated only one, they captured only 33% of the cost of completing current technical evaluations by qualified experienced engineers.
- The EIA assumes every dairy has only one lagoon. This is not the case. We suggest your staff consult with the staff at the Washington State Department of Agriculture Dairy Nutrient Management Program. Officials there should be able to provide a more accurate range of the number of lagoons per farm. These figures can then be used to more accurately estimate the costs each prospective permittee will incur.
- Ecology prepared a small business economic impact analysis of the proposed regulations. The projected costs and staffing does not reflect our experience. For instance, the mandated lagoon inspection and report could never be completed for \$7,400 and, of course, the amount projected by Ecology does not take into account mobilization of personnel and the costs that a facility would need to take in assisting with an inspection. The economic impact analysis should be re-done and Ecology should make greater effort to reduce the costs imposed by excessive recordkeeping, reports, studies, technical monitoring, and public disclosure.

Ecology Response:

Ecology has modified the lagoon assessment requirements in the permit to require the use of the NRCS Engineering Technical Note 23. See response to special condition S7.B comments.

13. Impacts to small facilities

- As DOE notes above, the decision to exempt small CAFOs from permit coverage, unless they are "significant contributor of pollutants," is one that is purely driven by economic costs to dairies. This is problematic for several reasons. First, Ecology fails to define how much a CAFO must pollute to be determined "significant." This permit requirement is vague, inconsistent with the requirements of other state and federal laws requiring permits or prevention of any on-going discharges, not just those that DOE determines to be significant.
- Results which indicate a disproportionate impact on small facilities (e.g. less than 200 milking cows) ignores the cost to everyone else when those small facilities are not required to implement pollution prevention measures included in the CAFO permit.

Ecology Response:

The designation of a facility as a significant contributor of pollutants is a case-by-case determination. See response to special condition S2.A comment 4. Determination that a small facility is a significant contributor of pollutants before requiring the facility to obtain permit coverage is a requirement of 40 CFR § 122.23(b)(9).

14. Record Keeping and Reporting

- Compliance with new record keeping requirements are also seriously underestimated, again using a typical mid- sized facility with 3,000 milking cows (with attendant numbers of dry, heifer, calves also on site) including all sampling, testing, analysis, raw data collection and conformance with reporting and records keeping requirements is going to run \$20-30,000 per facility per year. Large facilities, even with "economy of scale" will face even higher costs.
- There is no indication that any analysis was done of the cost for these added requirements. The costs were simply dismissed. (See last line page 10 of EIA.) Reports from current permittees indicate there is a very significant administrative cost in time (above and beyond requirements for recordkeeping under RCW 90.64). The EIA must analyze these new costs. We suggest checking with current CAFO permittees or other NPDES permit holders to determine costs of these new administrative requirements in the draft permit.
- No cost analysis was done on what this may cost a farm in terms of preparing, keeping, and complying with public record requests. Records that the public may request include any and all records required in the permit. Those requests can occur at any time, by anyone, for any records required. Compliance with public records requests can and has been a significant cost to state and local governments. Our farmers have no idea what the compliance costs will be for this aspect of the permit. These costs are new, and at least some estimation of this cost should be provided.

Ecology Response:

Federal CAFO rules have record keeping requirements (40 CFR § 122.42(1)(e)(9) and 40 CFR § 122.42(2) – (4)) that Ecology is required to implement in the combined permit. Because the state only permit covers the exact same activities, Ecology has required the same record keeping. This also provides continuity between the two permits and if a Permittee is required to move from the state only permit to the combined permit, they will already be familiar with the record keeping requirements

See also response to special condition S6 comments.

14. The Regulatory Fairness Act, chapter 19.85 RCW required for any new legislative rule and the least burdensome alternative must be chosen.

Ecology Response:

Chapter 19.85 applies to administrative rules (WACs) adopted by Ecology or other agencies, not to water quality permits issued under chapter 90.48 RCW, chapter 173-226 WAC, and the federal CWA. WAC 173-226-120 requires that Ecology develop a Small Business Economic Impact Statement as part of permit development. Ecology has done so.

COMMENTS ON THE MANURE AND GROUNDWATER LITERATURE REVIEW

Commenters:

<ul style="list-style-type: none">• Agri Beef Co.• Gary Herbert• Van Berkum & Sons Dairy	<ul style="list-style-type: none">• Washington State Dairy Federation	<ul style="list-style-type: none">• Yakima Valley Dairy Federation
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Range of Comments:

Other than one reference regarding seepage rates through thick clay soils, the literature review has no discussion on changes to permeability in compacted clays or changes in use of Darcy's law in tight soils. Soil water movement is not as simple as water falling via gravity through a known medium.

Ecology Response:

The literature review has a section on storage lagoons that includes lagoon design, suitable soils, liner permeability, seasonal high water table considerations, and minimum vertical separation. Nine sources of literature are summarized on permeability and seepage rates, and Table 19 summarizes this information.

Ecology agrees that soil water movement is not simple. Water movement through a lagoon liner involves more than gravity. Pressure head increases as the depth of liquid in a lagoon increases. This pressure head is the primary driving force that moves water through the liner. Since all liners have a permeability, the amount of leakage/seepage can be calculated using Darcy's Law and is a function of the liner permeability, liner thickness, the depth of water/liquid in the lagoon and the area of the lagoon. This concept is explained in the Agricultural Waste Management Field Handbook Appendix 10D.

COMMENTS ON ENVIRONMENTAL JUSTICE RELATED TO THE CAFO PERMIT

Commenters:

<ul style="list-style-type: none"> • Abdirahman Mohamed • Amelia Marchand • Barb Drake • Caleb Laieski • Center for Food Safety • Center for Food Safety • Center for Food Safety • Community to Community Development • David Asher • David Van Cleve • Davide Morales • Dean & Martha Effler • Emily Krieger 	<ul style="list-style-type: none"> • Form email with Subject Line: Please support stronger CAFO rules • Francisco Fernandez • Joel Green • Jose Martinez • Kathleen Schormann • Law Office of Hector Leal • Margie Van Cleve • Marline White • Martin Kimeldorf • Martin Kimeldorf • Mary Baeckler • Matthew Seaman • Melissa & Jim Briggs • Michael Sennett 	<ul style="list-style-type: none"> • Mindy Roberts • OneAmerica • Our Environment • Patty Martin • Progreso: Latino Progress • Rebecca Canright • Rebecca Wolfe • Sandy Braden • Sierra Club • Steven Groen • Teodora Martinez-Chavez • Washington Environmental Council • Washington League of United Latin American Citizens • Wendy Harris
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Range of Comments:

1. Environmental Justice Impact Analysis

- Conduct environmental justice impact analysis of communities affected by CAFOs throughout the state and act upon findings.
- Withdraw current draft permit and reissue a draft that better protects human health and the environment while addressing and being informed by environmental justice impacts analysis.
- Perform environmental justice analysis that compares the public health risks to environmental justice.
- Conduct environmental justice analysis of communities affected by CAFOs throughout the state and act on the findings.

Ecology Response:

Conducting an environmental justice analysis is outside of the scope of the draft Concentrated Animal Feeding Operation (CAFO) General Permit process. However, state and federal laws require that all beneficial uses of waters are protected equally across the state, ensuring the same protective standards statewide.

Ecology does not have statutory authority to require additional area specific protections to certain areas based on existing environmental conditions and impacts. Extra protections for such areas are achieved through impaired (303d) waterbody listings and TMDLS, which are both of which are effluent limitations for permits.

Ensuring all Washington residents have equitable access to Ecology activities and decisions is an important part of the Agency’s commitment to environmental justice.

2. Materials for to Non-English Speakers

- Provide important informational materials in Spanish.
- Ecology is failing to provide communities with permit and permit related materials in a language other than English, a violation of EPA's Title VI compliance guidance.

Ecology Response:

Title VI of the Civil Rights Act, Ecology must not discriminate against persons based on their race, color, or national origin and must provide limited English proficient (LEP) persons meaningful access to programs and activities. Ensuring all Washington residents have equitable access to Ecology activities and decisions is an important part of the Agency's commitment to environmental justice and meeting federal obligations under Title VI.

As part of Ecology's efforts to engage Washington's diverse residents, news releases about Ecology actions are routinely sent to ethnic media outlets, including Spanish media. As part of the 2014 preliminary draft listening session in the Yakima area, Ecology provided Spanish interpretation services that were announced in Spanish at the beginning of the meeting. While no interested parties made use of this service at the listening session, Ecology remains committed to accommodating requests for translation and interpretation services.

For the formal public hearings on the draft permits in 2016, Ecology was informed that there was interest in Spanish language materials and interpretation services. In response, Ecology provided Spanish interpretation services and a CAFO permit summary document in Spanish at the Yakima public hearing. For Spanish speakers seeking more information, an Ecology staff contact is provided on Ecology's main CAFO permit webpage.

3. Human Health Impact of High Nitrate in Groundwater

- Health and economic burden of nitrate contamination and health risks disproportionately affect low-income Spanish speaking population.
- Human health problems are associated with CAFOs.
- Low income, Hispanic communities most impacted by CAFOs.
- Environmental justice issue regarding communities most affected by CAFOs.
- Social and health costs placed disproportionately on low-income and minority communities.
- High occurrences of miscarriage, birth defects, and poor infant health in Yakima Valley.
- Demographic characteristics of communities dependent on groundwater for drinking water in Lower Yakima Valley make this permit a serious environmental justice issue.
- Proposed regulations discriminate against Hispanic dairy employees.
- Lack of understanding economic implications of CAFOs upon the rest of the Yakima Basin.
- Provide robust stakeholder engagement process with overburdened communities whose water quality depends on strong nitrate pollution prevention measures.
- If costly regulations are enacted many disadvantaged Hispanic employees will lose their jobs; analogous to demise of logging communities due to spotted owl.

- **Ecology Response:**

Ecology permits are required to protect water quality equally in all locations in the State. This means that discharges that occur must all meet the same water quality standards (or in some cases a higher level due to a 303d or TMDL listing, see response to REFERCE). A permit only addresses a discharge to water bodies from a specific source, and does not regulate or clean up what is already in the water historically. Clean-up, especially of groundwater, is a long-term effort that must have a holistic approach addressing all sources of pollution. The creation of a groundwater management area (GWMA) in Yakima is one such action that has been taken to improve ground water quality. Under the GWMA, local, state, and federal government, and stakeholder groups are involved in planning and implementing activities to improve local ground water quality.

See also response to Comments on Environmental Justice comment 3 (above).

Washington Department of Health (DOH) and the local health departments also play a role in protecting drinking water and informing the public about potential risks and the level of risk in drinking water supplies. DOH provides this information here:

<http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/Contaminants/Nitrate>
<http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/WaterSystemAssistance/GroupB/GeneralInformation/Nitrate>.

It will take a concerted effort by all parties (local, state, and public) to clean-up groundwater supplies. Given the multiple sources of groundwater contamination, including legacy pollutants and significant sources not covered by this permit, individuals relying on private wells for drinking water should contact their local health district for information on well water testing.

4. Additional Permit Requirements based on Environmental Justice

- DOE has ignored its own recommendations through failure to adequately address environmental justice impacts associated with CAFO discharge.
- CAFOs must accept costs associated with public health and environmental protection as cost of doing business.

Ecology Response:

Permits are required to protect all waters equally across the state, and protect them from discharges that would violate water quality standards. If a requirement is necessary to protect water quality in one location, it is most likely necessary to protect water quality in all locations covered by the permits. This means that after the permits are issued, CAFOs covered by the permit must meet the same requirements for protecting water quality no matter where they are located within the state.

Permits are also forward looking and deal with the discharges from a facility after it is covered, and cannot address impacts that may have occurred historically (i.e. a permit doesn't clean up what is already in the water, it prevents more from getting into the water).

5. Additional Permit Requirements based on Human Health

- Require groundwater monitoring at minimum where risk is greatest to people.

- Chronic exposure of Yakima Valley residents to high nitrate levels.
- Groundwater monitoring should be required where the risks are highest to people and water.
- Acts that could be taken to improve public health and safety were not taken.

Ecology Response:

Ecology does not directly incorporate requirements into a permit based on human health risks. Human health risks from various pollutants (not just those from CAFOs) are considered and included in the development of the state water quality standards (chapters 173-200 and 173-201A WAC). Permits are then written to comply with water quality standards.

Washington Department of Health (DOH) and the local health departments also play a role in protecting drinking water and informing the public about potential risks and the level of risk in drinking water supplies. DOH provides this information here:

<http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/Contaminants/Nitrate>
<http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/WaterSystemAssistance/GroupB/GeneralInformation/Nitrate>