

POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

COMMUNITY ASSOCIATION FOR
RESTORATION OF THE ENVIRONMENT
(CARE),

Appellant,

v.

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

Respondent,

NORTHWEST DAIRY ASSOCIATION,
WASHINGTON STATE DAIRY
FEDERATION, WASHINGTON
CATTLEMEN'S ASSOCIATION,
WASHINGTON CATTLE FEEDERS
ASSOCIATION, NORTHWEST POULTRY
INDUSTRIES COUNCIL,

Intervenors.

PCHB No. 06-057

**FINDINGS OF FACT, CONCLUSIONS
OF LAW, AND ORDER**

This appeal involves the Concentrated Animal Feeding Operation National Pollution Discharge Elimination and State Waste Discharge General Permit (CAFO General Permit) that was issued by the Washington State Department of Ecology (Ecology) on June 21, 2006. The Appellant and Intervenors in this matter challenged numerous conditions contained in the permit. The Pre-Hearing Order identified 19 issues for resolution by the Pollution Control Hearings

1 Board (Board), five of which were withdrawn by agreement of the parties¹ and several of which
2 were resolved through summary judgment motions prior to hearing.²

3 The Board conducted a hearing on the five remaining legal issues in the appeal, which
4 involved the manner and extent of public access to CAFO records required by the permit, the
5 adequacy of the permit's environmental monitoring requirements, and the enforceability of the
6 nutrient management plans required under the permit.

7 The hearing was held the week of April 30 through May 4, 2007, at the Board's offices in
8 Lacey, Washington. Appellant Community Association for Restoration of the Environment
9 (CARE) was represented by Charles Tebbutt and Daniel Galpern, both of the Western
10 Environmental Law Center. Ronald L. Lavigne, Assistant Attorney General, represented
11 Respondent Ecology. Attorneys John Ray Nelson and Lori A. Terry of Foster Pepper LLC,
12 represented Intervenor Northwest Dairy Association. Attorneys James Tupper and Josh Brower
13 of Mentor Law Group, represented Intervenors Washington State Dairy Association, Washington
14 Cattlemen's Association, Washington Cattle Feeders Association, and Northwest Poultry
15 Industries Council.

16 The Board was comprised of Andrea McNamara Doyle, Presiding, William H. Lynch and
17 Kathleen D. Mix, Members. Kim Otis and Randi Hamilton of Gene Barker & Associates of
18 Olympia, Washington provided court reporting services.

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¹ Issues No. 4, 6, 11, 12, and 15 were withdrawn and therefore are not addressed by the Board.

² See Board's April 20, 2007, letter re: summary judgment motions and July 31, 2007, Orders re: same.

1 requirements, and its request for the Permit to include surface and groundwater monitoring, were
2 not supported by the weight of the evidence.

3 Based on its review of substantial, though at times conflicting testimony and exhibits, the
4 Board enters the following:

5
6 FINDINGS OF FACT

7 *BACKGROUND*

8 1.

9 In Washington State, nutrients and wastes from dairy and other livestock operations are
10 regulated through programs that are currently co-administered by Ecology and the Washington
11 Department of Agriculture (Agriculture). CAFO waste discharges are regulated by Ecology
12 through the issuance of National Pollution Discharge Elimination System (NPDES) and state
13 waste discharge permits. The current CAFO General Permit took effect on July 21, 2006, and
14 will expire in five years on July 21, 2011. *Ex. E-1.*

15 2.

16 Until 2003, Ecology also administered the Livestock and Nutrient Management Program,
17 when the Legislature directed it be moved to Agriculture. This program, now administered by
18 Agriculture, includes inspecting livestock operations and providing technical assistance to
19 operators with their nutrient waste management activities. *Testimony of Mena.*

1 Overview of CAFO General Permit Requirements

2 3.

3 The CAFO General Permit requires certain animal feeding operations (AFOs), such as
4 cattle feedlots, dairies, and poultry or pig producers where animals are kept and raised in
5 confinement, to manage manure wastes to avoid polluting rivers and streams, lakes, and
6 underground aquifers. The permit applies to some, but not all, AFOs in the state, based on the
7 number of animals present, whether there is a discharge to waters of the state, or whether
8 Ecology has formally determined that an AFO is a significant contributor of pollutants to waters
9 of the state regardless of size. *Ex. A-1* (Definitions, Appendix 2). The CAFO General Permit
10 uses a “no discharge” permitting scheme. The permit’s effluent limitations generally prohibit all
11 discharges of manure, litter, or process wastewater into waters of the state, except those resulting
12 from extreme storm events. *Ex. E-1* (S1.A.1-2). Discharge of field runoff is prohibited when
13 field applications of manure exceed agronomic rates (S1.A.3), and no discharges may cause or
14 contribute to violations of the water quality standards in the receiving water. *Id.* (S1.A).

15 4.

16 Process wastewater discharges, including seepage from waste storage facilities, may not
17 reduce existing groundwater quality, except under limited circumstances approved in advance by
18 Ecology, and discharges may not cause or contribute to violations of state groundwater quality
19 standards. (S1.B). The permit exempts from groundwater quality standards certain contaminant
20 concentrations found in saturated soils that have been applied at agronomic rates for agricultural
21

1 purposes, if those contaminants will not cause pollution of any groundwaters below the root zone
2 (commonly referred to as the agricultural stormwater exemption). *Id.*

3 5.

4 The permit requires CAFOs to minimize any discharges that may be authorized by
5 federal regulations due to upset or bypass conditions (S1.A), and to take immediate action in
6 response to unauthorized discharges. *Id.* (S1.E). All discharges to waters of the state must be
7 reported by CAFOs to Ecology as soon as possible but no later than 24 hours after the discharge.
8 *Id.* (S4.B).

9 6.

10 Other special conditions of the CAFO General Permit address additional effluent
11 limitation requirements (S1); permit coverage (S2); nutrient management plans (S3); record
12 keeping, reporting, and environmental monitoring (S4); waste storage facilities (S5); prevention
13 of system overloading (S6); and termination of coverage (S-7). *Id.*

14
15 Permit Development Process

16 7.

17 The current CAFO General Permit was developed by an internal Ecology permit team
18 using the previous Dairy General Permit as a starting point. Ecology based the permit's
19 conditions on the U.S. Environmental Protection Agency's 2003 federal CAFO rules (EPA
20 CAFO Rules), the federal Court of Appeals 2005 *Waterkeeper* decision,³ and on state laws and
21

³ *Waterkeeper Alliance, Inc. v. U.S. Environmental Protection Agency*, 399 F.3d 486 (2nd Cir. 2005).

1 regulations. It was revised a number of times based on input and feedback from the internal
2 team, an external Permit Advisory Committee, and comments received during two public
3 comment periods. *Ex. E-2, Testimony of Kolesseus.* Ecology's lead permit writers for the CAFO
4 General Permit were Andrew Kolesseus, from September 2003 until May 2005, and Kevin
5 Hancock, from May 2005 forward. Ecology's internal permit team was comprised of staff from
6 the agency's water quality and air quality programs, as well as regional dairy inspectors.
7 *Testimony of Kolesseus.*

8 8.

9 The Permit Advisory Committee consisted of representatives from regulated CAFO
10 industries, other governmental entities and agencies, and environmental organizations, including
11 Agriculture, EPA, the Nooksack and Lummi Tribes, conservation districts, People for Puget
12 Sound and Wash PIRG. *Ex. E-2, Testimony of Kolesseus.* The Livestock Development
13 Oversight Committee (LDOC) also advised Ecology during the CAFO General Permit
14 development process. *Ex. A-119. Testimony of Mena.* The state legislature created LDOC in
15 2003, and the committee met periodically from October 2003 through July 2006. LDOC was
16 comprised of representatives from various stakeholder groups appointed by the Governor, and it
17 formed a permit subcommittee to participate in the CAFO General Permit process. *Ex. A-40,*
18 *Testimony of Kolesseus.* LDOC also had a technical subcommittee, which was chaired by Dr.
19 Joseph Harrison. Dr. Harrison is a Washington State University (WSU) Professor and Extension
20 Dairy Specialist and was appointed by the Governor as her representative on the LDOC. *Ex. I-*
21 *84, A-119, Testimony of Harrison.*

1 9.

2 Subcommittees were not restricted to LDOC members, and participation by interested
3 people was encouraged. *Ex. A-119, Testimony of Harrison.* CARE's co-founder, Helen
4 Reddout, was personally invited to participate in LDOC subcommittee activities, and she
5 attended at least one meeting. She was also sent periodic updates related to development of the
6 CAFO General Permit as part of an LDOC email distribution list. *Ex. A-121. Testimony of*
7 *Mena, Harrison.*

8 10.

9 Ecology shared early working drafts of the permit with all stakeholders on the Permit
10 Advisory Committee and LDOC permit subcommittee before the first public draft was released.
11 Ecology received and considered numerous comments from internal agency staff and external
12 advisory group members prior to and during the first public comment period. *Ex. A-43 through*
13 *A-45, A-47, A-58, A-59, A-105 through A-116, A-118, A-121, A-122, A-125 through 143, A-148,*
14 *A-150.* The agency also prepared a written summary of comments received during the informal
15 comment period on the preliminary draft. *Ex. A-60, Testimony of Kolleseus.*

16 11.

17 The first public comment period on the CAFO General Permit was December 2004
18 through January 2005. During this comment period, Ecology conducted four public workshops
19 and hearings around the state on the proposed permit, two in Eastern Washington (Yakima and
20 Spokane) and two in Western Washington (Mt. Vernon and Longview). Twenty to 40 people
21 attended each workshop. In February 2005, the Second Circuit Court of Appeals issued the

1 *Waterkeeper* decision that directly impacted several sections of the draft CAFO General Permit.
2 As a result, Ecology revised several parts of the draft permit to address the federal court’s ruling
3 and reissued a new draft for a second public comment period from October 19 to December 5,
4 2005. During this second public comment period, Ecology conducted three additional public
5 workshops and hearings on the revised draft permit, in Mt. Vernon, Longview, and Yakima. The
6 agency prepared a 163-page response to all comments received during both rounds of public
7 comments. *Ex. E-3, Testimony of Kolesseus, Hancock.*

8 12.

9 CARE was co-founded several years ago in the Yakima Valley by Ms. Reddout. Its
10 mission is to oppose present dairy CAFO operations and to support sustainable, pasture-based
11 dairies. CARE members oppose the living conditions of animals at CAFOs, and the methods of
12 irrigation and manure application used by dairies (*e.g.*, use of wheel lines, manure guns/cannons,
13 and sub-surface injection). In advancement of its mission, CARE has pursued citizen
14 enforcement lawsuits under the federal Clean Water Act against at least two CAFO operators in
15 the Yakima Valley, the DeReuyter and Bosma dairies. *Testimony of Reddout.* It also submitted
16 public comments on this permit. *Ex. A-181, A-183, Testimony of Fendell.*

17 13.

18 Ecology’s Director, Jay Manning, met with representatives of CARE during the permit
19 development process for the purpose of hearing directly from CARE about its concerns with the
20 permit. Ecology added the permit condition requiring CAFOs to develop lagoon leak detection
21

1 systems (S3.A.2.k) directly in response to concerns raised by CARE with Director Manning.

2 *Testimony of Hancock.*

3
4 Water Quality Concerns

5 14.

6 One of the main environmental concerns with CAFO waste discharges is the nitrogen (N)
7 found in animal manures and process wastewater. Elevated levels of nitrogen can contaminate
8 the surface or groundwaters into which these wastes discharge. There are three main forms of
9 nitrogen found in manure: ammonia and organic nitrogen, plus a relatively small amount of
10 nitrate nitrogen. Growing crops typically prefer the nitrate form of nitrogen, but if more nitrate
11 is available than can be used by plants, the excess nitrate may leach to groundwater. Nitrate-N
12 poses the greater risk to groundwater compared to the other forms of nitrogen because it is the
13 most soluble form of nitrogen and moves most easily in water through soil.⁴ *Ex. A-33,*

14 *Testimony of Harrison.* Other pollutants of concern associated with CAFO wastes include
15 phosphorous, organic matter, solids, pathogens, and odorous compounds. *Ex. E-2.*

16 15.

17 The impact of dairy and other livestock operations on Washington surface and
18 groundwater has been the subject of a number of investigations over many years. Ecology
19 reviewed the available Washington-specific literature, reports, and studies as part of the permit

20 _____
21 ⁴ Ingestion of high levels of nitrate can cause anemia and, if not treated, death to infants. Nitrate is considered an “acute contaminant” because short-term exposure to levels above the Maximum Contaminant Level (MCL) can cause a blood disorder in sensitive individuals. Elevated levels of nitrate may also indicate the presence of other contaminants such as pathogens and pesticides. *Ex. E-2.*

1 development process. *Testimony of Kolleseus*. A 1995 literature review of surface water quality
2 studies related to dairy waste practices in Washington State concluded that dairies have a
3 significant impact on the state's water quality in selected areas where there are high
4 concentrations of dairies. The most common water quality impacts were higher fecal coliform
5 levels and lower dissolved oxygen levels. The literature review concluded that it cannot be
6 assumed that individual dairies are causing significant water quality impacts in areas where
7 dairies are not highly concentrated. *Ex. A-11*. One of the studies included in the literature review
8 was a study conducted by Ecology during the early 1990's. The final report from that study
9 found that leakage from waste lagoons in Whatcom and Yakima Counties had contributed to
10 increased concentrations of several pollutants in groundwater, although sources of contaminant
11 loading other than lagoon leakage were also found to affect groundwater quality, including other
12 non-facility activities upstream of the monitoring network. *Ex. A-10*.

13 16.

14 More recently, field investigations in the Sunnyside area conducted by Heritage College
15 between June 2001 and October 2002 concluded that the elevated concentrations of nitrate-
16 nitrite-N and coliform bacteria are most likely the result of animal wastes coming from the 89
17 feedlots and dairy operations located in the study area. *Ex. A-38*. During a similar timeframe
18 (May through September 2001), as part of the implementation of the Granger Drain Fecal
19 Coliform Bacteria Total Daily Maximum Load (TMDL) water quality clean-up plan, the South
20 Yakima Conservation District conducted a preliminary study of the sources of fecal coliform in
21 the Granger Drain watershed, an area with 18,000 acres of irrigated agricultural lands and

1 approximately 43,000 dairy cows. The study concluded that “manageable” sources of
2 contaminants (such as livestock and failing septic systems) were in roughly equal proportion to
3 the “unmanageable” sources (such as wildlife). *Ex. I-14.*

4 17.

5 A 2002 report by the Valley Institute for Research and Education (VIRE Report) found
6 significant impairment of groundwater quality in the southern portion of the lower Yakima
7 Valley (containing 60 dairies, some of which were CAFOs), where nitrate levels exceeded the
8 maximum contaminate levels in 21 percent of the wells tested, and were elevated in another 19
9 percent. The VIRE Report was not designed to identify sources of contamination but noted that
10 other studies had shown that overuse of nitrogen fertilizers was the primary cause of nitrate
11 contamination of groundwater in agricultural areas. *Ex. A-35.*

12 18.

13 CARE members have observed and recorded, by photograph and videotape, examples of
14 the kinds of dairy practices that can negatively impact water quality, including the stockpiling of
15 manure in close proximity to springs and other water bodies; deep manure application on fields;
16 winter manure applications conducted during freezing temperatures and spread over snow-
17 covered fields; the use of field gullies as slurry drains for wastewater and irrigation run-off; and
18 liquid manure draining from fields into public ditches and onto adjacent properties. CARE
19 members have observed these types of dairy practices in the Yakima Valley over many decades,
20 some of which continue to occur as recently as February and March 2007. *Ex. A-18, A-83, A-96,*

1 A-99, A-101, A-184, A-185, A-186, *Testimony of Reddout, Fendell, Martin.*⁵ Their concerns
2 apply generally to practices observed at both large and small dairies, irrespective of whether the
3 operations are covered by the CAFO General Permit. *Testimony of Reddout, Fendell.*

4 19.

5 Individual CARE members have lodged complaints with regulatory enforcement
6 agencies about specific incidents at dairies in the lower Yakima Valley area. *Testimony of*
7 *Reddout, Fendell, and Martin.* In addition to CARE's pursuit of CWA citizen suits against
8 dairies, at least one CARE member has also been individually involved in litigation against a
9 neighboring dairy. *Testimony of Fendell.*

10
11 Compliance and Enforcement

12 20.

13 The CAFO General Permit currently covers approximately 35 of the 507 licensed dairies
14 and approximately five animal feedlots in the state. *Testimony of Mena.*

15 21.

16 Agriculture's Livestock Nutrient Management Program employs three full-time
17 inspectors and a supervisor who spends half time also conducting inspections. These inspectors
18 conduct routine inspections of dairies and CAFOs for compliance with nutrient management
19 plans, record keeping, and site condition requirements, and to look for actual or potential
20 discharges. Routine inspections include a review and audit of on-site records, including the

21 _____
⁵ Only portions of A-86 and A-99 were admitted, and testimony on A-83 was limited to specific purposes. The Board's consideration of these exhibits was limited accordingly.

1 previous three years' soil records, land application rates, fertilizer inputs, and crop yields. Visual
2 inspections of application fields, production areas, and waste lagoons are also a part of routine
3 inspections. *Testimony of Prest.*

4 22.

5 The program's goal for routine inspections is to visit each facility at least once during a
6 22-month rotation, an improvement over its previous goal of a 24-month rotation. It has been
7 successful in meeting those goals. *Ex. I-57, I-60.* Inspectors also respond to complaints,
8 generally within 24 hours to 3 days. Sometimes Agriculture inspectors enlist the help of
9 conservation district, health department or Ecology staff to make the initial response to a
10 complaint. *Testimony of Mena, Prest.*

11 23.

12 Agriculture inspectors utilize a range of enforcement tools available to them independent
13 of Ecology enforcement authority, including the issuance of warning letters, notices of violation
14 (NOVs), administrative orders, and penalties. The five most recent penalty actions (from FY 06)
15 involved penalties in the \$3,000 to \$5,000 range. *Ex. I-58, Testimony of Mena.*

16 24.

17 Agriculture seeks a 95 percent rate of compliance with the CAFO General Permit, and its
18 most recent data indicates just above 85 percent of permitted CAFOs are in full compliance with
19 all conditions of their permits. Since the CAFO General Permit took effect in July 2006,
20 Agriculture has received 8 complaints, inspected 40 permitted CAFO facilities, and issued two
21 NOVs. *Testimony of Mena.*

1 25.

2 Ecology's lead permit writer did not personally review the previous compliance history
3 of the dairy industry as part of his work on this permit. *Testimony of Kolleseus*. Generally,
4 members of Ecology's internal permit team did not review information about individual dairies
5 or their compliance histories in developing the permit. *Testimony of Storman*. The permit team
6 did, however, consult with agency inspectors and enforcement personnel to find out what kinds
7 of tools they needed to ensure compliance with the permit. *Testimony of Selby*.

8
9 *CHALLENGED PERMIT PROVISIONS*

10 The conditions of the CAFO General Permit most relevant to this appeal before the Board
11 include those concerning record-keeping and reporting, nutrient management plans, and
12 environmental monitoring. We address each in turn.

13 Record Keeping and Reporting

14 26.

15 The CAFO General Permit establishes a record-keeping and reporting regime that
16 requires permittees to create, retain, and file several types of records and reports. Generally, all
17 CAFOs must create, maintain for five years, and make available to Ecology and Agriculture
18 upon request, all records required by the permit. *Ex. E-1 (S4.A)*. More specifically, all CAFOs
19 must file an initial NMP with Ecology as part of the permit application process, and submit to
20
21

1 Ecology all updates to their NMPs.⁶ *Id.* (S2.B, S3.E). The permit also requires CAFOs to
2 submit to Ecology two other types of documents: (1) written reports for any noncompliance with
3 the permit or any discharges to waters of the state, including certain information specified by the
4 permit; and (2) annual reports covering eight topics, including the results of required
5 environmental monitoring. *Id.* (S4.B.1, S4.B.3).

6 27.

7 All CAFOs (except horse, sheep, and duck operations) must keep certain additional
8 operational records on-site and available upon request by Ecology and Agriculture, but the
9 permit does not require this information to be filed with Ecology. Operational records include
10 certain specified daily, weekly, and periodic inspection and activity records related to production
11 areas⁷ and other records related to land application areas⁸ such as periodic soil and wastewater
12 sampling, weather information, application rate calculations, method used to apply the manure or
13 process wastewater, and equipment inspections. *Id.* (S4.2.a-b).

14 28.

15 Ecology's decision to require that certain records be filed with the agency and others to
16 be kept on-site was based on the federal EPA CAFO Rule requirements. *Testimony of Selby.*

17
18
19 ⁶ New facilities must submit an initial NMP with their coverage application, while existing dairies covered under the
previous Dairy General Permit must submit an *updated* NMP with their applications for coverage under this new
CAFO General Permit.

20 ⁷ "Production areas" are defined in the CAFO General Permit as those parts of a CAFO that include "the animal
confinement area, the manure storage area, the raw materials storage area, and the waste containment areas."

21 ⁸ "Land application areas" are defined in the CAFO General Permit as "any land, whether it is owned, rented, leased
or used by the CAFO owner or operator, to which manure, litter or process wastewater from the production area is
or may be applied by the CAFO owner or operator or an agent of the CAFO owner or operator."

1 The operational records that will be kept on-site at CAFO facilities are not the kinds of records
2 that are required by the EPA CAFO Rule. *Testimony of Kolleseus.*

3 29.

4 Ecology has provided public access to CAFO-related records when citizens have
5 requested them in the past. On at least one occasion, it took several months for Ecology to
6 release the requested documents. *Testimony of Reddout, Testimony of Selby.* Although not
7 required or addressed by the permit, Ecology has a procedure for obtaining public access to on-
8 site records. The agency requests copies of the records from permittees when citizens request
9 them from Ecology, and then reviews the documents before public disclosure. *Testimony of*
10 *Selby.*

11 30.

12 Where permittees have certified to Ecology that their NMPs (or other requested
13 document) contain confidential business information (CBI), Ecology has redacted portions of the
14 NMP or other documents before public disclosure. Redacted portions of NMPs include site-
15 specific engineering calculations for the design of lagoon waste storage facilities and field-
16 specific calculations of agronomic application rates. *Ex. A-29, A-36, Testimony of Selby.*

17 31.

18 The agency has been making efforts to expedite the production of CAFO-related records
19 in response to public records requests. It is working to put procedures in place that will front-
20 load the analysis of CBI at the time NMPs are filed, so that CBI is identified before public
21 disclosure requests are made and response by the agency can be timely. *Testimony of Selby.*

1 32.

2 Only Ecology, Agriculture, and the permittee will have access to any redacted
3 information contained in the records required to be kept under the CAFO General Permit. *Ex. E-3, Testimony of Selby.* Some of the information that has been previously redacted is the kind of
4 information that inspectors review and rely upon in making compliance determinations.
5 *Testimony of Selby, Prest.* It is also the kind of information that CARE members believe they,
6 and their engineering consultants, need to evaluate whether to pursue citizen suits against
7 individual CAFOs. *Testimony of Reddout, Bell.*

8 33.

9
10 Some types of the redacted information, such as soil maps and descriptions of soil types,
11 are publicly available from alternative sources, but it takes time and costs money to obtain such
12 records. Other types of information are not publicly available from alternative sources, such as
13 site-specific implementation schedules for CAFO's best management practices and engineering
14 calculations used to design specific waste storage lagoons and determine agronomic application
15 rates for particular fields. *Testimony of Bell.*

16 34.

17 Detailed BMP implementation schedules would help citizens know the nature and timing
18 of various CAFO nutrient management activities. Specific lagoon engineering calculations
19 would allow citizens to know how much waste storage is available, how it is available, and to
20 compare anticipated seepage rates against actual lagoon levels. Field-specific agronomic rate
21 calculations would allow citizens to cross check the calculation against a CAFO's irrigation

1 water management plans. This type of detailed information is not essential for evaluating a
2 possible citizen enforcement action when there are clear discharges occurring in a “no-
3 discharge” situation, but it would help in evaluating less-clear situations. *Testimony of Bell.*

4
5 Nutrient Management Plans

6 35.

7 The permit’s regulatory approach depends, in large part, on the development and
8 implementation of Nutrient Management Plans (NMPs) to ensure that CAFOs employ effective
9 BMPs to prevent and control discharges. Ecology evaluates a permittee’s compliance with the
10 permit’s effluent limitations by determining whether the CAFO is following the terms of its
11 NMP. *Testimony of Selby.*

12 36.

13 The NMPs developed and implemented under the CAFO General Permit must conform to
14 the United States Department of Agriculture (USDA) Natural Resources Conservation Service
15 (NRCS) Field Office Technical Guide (FOTG) or equivalent best management practices. *Ex. E-1*
16 *1 (S3.A.1).* NMPs for Dairy CAFOs covered under the permit must be certified by local
17 conservation districts as meeting the minimum elements established by the Washington
18 Conservation Commission. *Id. (S3.A.4), Testimony of Selby.* Although not a specific
19 requirement of the permit, when a CAFO facility receives federal funding, its NMP must also be
20 certified by the USDA-NRCS. *Testimony of Mena.*

21 37.

1 The CAFO General Permit sets out several minimum elements that must be addressed in
2 every permittee's NMP, including the following: waste storage procedures; management and
3 disposal of mortalities; diversion of clean water from production areas; prevention of animal
4 contact with surface waters; handling and disposal of chemicals and other contaminants;
5 implementation of site-specific conservation practices; identification of testing protocols;
6 establishment of land application protocols to ensure appropriate utilization of nutrients; record
7 keeping; soil monitoring; and lagoon depth monitoring. *Ex. E-1* (S3.A.2.a-k). For those CAFOs
8 that land apply their animal waste or wastewater, their NMPs must also incorporate additional
9 practices related to determination of application rates; manure and soil sampling; inspection of
10 land application equipment for leaks; and setback requirements. *Id.* (S3.A.3.a-e).

11 38.

12 The Natural Resources Conservation Services, Field Office Technical Guide (NRCS-
13 FOTG) is a voluminous compendium of coded practice standards, technical notes, specification
14 sheets, and other guidance documents. Collectively, it includes a series of best management
15 practices that were developed nationally, as well as additional BMPs tailored at the state level,
16 for various agriculture-related practices. This compendium is generally relied on throughout the
17 agricultural industry. *Testimony of Kolleseus, Harrison.*

18 39.

19 Individual documents within the NRCS-FOTG direct different approaches to a particular
20 issue that may arise under variable circumstances, and in that way they offer a flexible approach,
21 capable of individual application to address case-by-case situations. Options and alternatives to

1 address the variable situations are often presented as “considerations.” *Testimony of Selby,*
2 *Harrison.*

3 40.

4 It is the series of interconnected guidance documents comprising the NRCS-FOTG that
5 form the basis of a NMP, and it is common for NMPs prepared or certified by conservation
6 districts to include copies of the applicable coded reference documents as attachments to the
7 NMP. *Testimony of Harrison.*

8 41.

9 Conservation Practice 590 (CP or Standard 590), contained in the NRCS-FOTG, is the
10 primary technical reference that outlines the general requirements applicable to all nutrient
11 management purposes in Washington. It also contains additional criteria for specific types of
12 nutrient management purposes (such as manure or organic by-product applications, minimization
13 of non-point source pollution, and protection of air quality), suggested considerations for
14 accomplishing other specific nutrient management objectives, and a list of required elements of a
15 nutrient management plan. CP 590 contains many internal references to other coded NRCS
16 documents as well as a general reference list of other related USDA and NRCS publications. *Ex.*
17 *A-77, Testimony of Harrison.*

18 42.

19 Ecology selected the NRCS-FOTG as the source for BMPs in the CAFO General Permit
20 because the agency determined it contained the best available standards to protect water quality.
21 *Testimony of Kolleseus.* Prior to developing the permit, Ecology’s Environmental Assessment

1 Program (EAP) had conducted an evaluation of one of the most widely used NRCS BMPs, the
2 application of dairy waste at agronomic rates (which requires winter storage of manure and
3 wastewater in ponds or lagoons). *Ex. A-33*. This study documented improvements in water
4 quality attributable to the use of agronomic application rates determined using NRCS standards.
5 Ecology also reviewed additional state-specific information about the effectiveness of NRCS
6 standards in reducing discharges from Washington livestock operations. *Id.*, *Testimony of*
7 *Kolleseus*.

8 43.

9 One source reviewed by Ecology's permit team included an EAP study from 1997-2000
10 conducted to assess the effectiveness of prescribed agronomic rate calculations for minimizing
11 leaching of manure-related nitrate to groundwater under different soil and hydrogeologic
12 conditions. The study found that where nitrogen applications (manure plus commercial
13 fertilizer) were double the calculated agronomic rate, the resulting groundwater nitrate and
14 nitrite-N concentrations were significantly higher than upgradient levels, and where nitrogen
15 applications ranged from below to 35% above the agronomic rate, the resulting groundwater
16 nitrate and nitrite-N concentrations were not statistically different than upgradient levels. *Ex. A-*
17 *34*.

18 44.

19 During the period of 1999 through 2003, the Whatcom Conservation District and NRCS
20 staff developed NMPs for 204 (99.5%) of Whatcom County dairy operations. The
21 implementation of these approved and certified NMPs over the same time period contributed to a

1 corresponding reduction in fecal coliform levels to well below the levels targeted in a water
2 quality clean-up plan (the Lower Nooksack River Basin Bacterial TMDL). *Ex I-18, Testimony of*
3 *Harrison*. Whatcom County, where more than 54,000 acres are under conservation plans
4 applying NRCS practices, is one of the few areas in the country where a water quality clean-up
5 plan, in the form of a bacterial TMDL, has successfully achieved its pollution reduction goals.
6 *Ex. A-109, I-9, I-18*. Previously contaminated shellfish beds have been re-opened due to
7 improvements resulting from the implementation of NRCS best management practices contained
8 in the NMPs. *Ex. A-109, Testimony of Kolleseus*.

9 45.

10 No studies have yet been completed that empirically measure water quality impacts of
11 CAFOs operating in compliance with new, more stringent, CAFO General Permit requirements.
12 *Testimony of Storman*. Ecology expects better environmental results from the more stringent
13 NMP requirements in this CAFO General Permit than the previous Dairy General Permit.
14 *Testimony of Kolleseus*. Some of the notable changes from the previous dairy permit include the
15 need for NMPs to address calibration of equipment, handling of mortalities, preparation of
16 emergency contingency plans, fall soil testing for nitrates, and annual sampling for phosphorous,
17 organic matter, and ammonia. *Testimony of Prest*.

1 *Agronomic Rates*

2 46.

3 The CAFO General Permit requires NMPs to include field-specific calculations of
4 agronomic rates and to establish protocols to ensure appropriate agricultural utilization of the
5 applied nutrients. *Ex. E-1* (S3.A.3.a-b, S3.A.2.h). The CAFO General Permit does not define
6 the terms “agronomic rates” or “appropriate utilization” of nutrients within the permit.

7 *Testimony of Harrison.*

8 47.

9 There is a difference between maximum uptake of nutrients versus optimal uptake of
10 nutrients, and determining an agronomic application rate requires consideration of several factors
11 to achieve appropriate utilization: the form of the nitrogen being applied, the timing of the
12 application, the placement, and the amount. This is because the reaction processes converting
13 one form of nitrogen to another are affected by soil temperatures, bacteria levels, and soil
14 moisture levels, all of which vary throughout the year. The most active conversion from organic-
15 N to nitrate-N occurs during summer. This process slows down in late summer as soil dries out.
16 *Ex. A-28, Testimony of Harrison.* Each of these factors varies from site to site, and the typical
17 NMP includes a spread sheet that calculates or estimates values for each factor. *Testimony of*
18 *Harrison.* Calculation of proper agronomic rates takes into account the irrigation and application
19 (*i.e.*, placement) methods to be used. *Testimony of Kolleseus.* Evaluation of timing includes
20 consideration of both when particular crops are best able to use the nitrogen, as well as weather
21 conditions during application. *Testimony of Harrison.*

1 48.

2 Winter applications of manure are possible in Washington, but the set of conditions under
3 which NRCS practices would allow such application are very limited. The practices governing
4 winter applications of manure in Washington State are contained in an NRCS Technical Note
5 (Agronomy 14). *Ex. A-73*. These practices include additional risk assessments (such as soil
6 mapping, soil nitrate testing, phosphorous index calculations, and soil limitation analysis), as
7 well as analysis of field area limitations, climatic site conditions, and operational characteristics.
8 It is estimated that only approximately six of the 150-200 dairies in Whatcom County would
9 meet all the conditions necessary to allow for winter applications. *Testimony of Harrison.*

10 49.

11 Although the permit itself does not define the terms “frozen” or “saturated” ground, they
12 are addressed in the Agronomy 14 Technical Note of the NRCS-FOTG. This Technical Note for
13 Washington defines “frozen soils” as those where “three inches of soil or more within the top 12
14 inches of soil is at or below 32 degrees F.” The same note also defines “saturated soils” as those
15 where “soil pores are saturated and little or no oxygen is present. This condition is usually
16 caused by slow permeability, shallow water table and/or restrictive soil horizons.” *Ex. A-73,*
17 *Testimony of Harrison.*

1 *Waste Storage Lagoons*

2 50.

3 The CAFO General Permit requires all new or expanded waste storage facilities to be
4 sited, designed and constructed consistent with NRCS “Waste Storage Facility” conservation
5 practice standards for Washington State (CP 313). *Ex. E-1 (S5)*. CP 313 requires two feet of
6 vertical separation between the bottom of a lagoon and the top of the highest seasonal
7 groundwater table. *Ex. A-70*. New lagoon liners must have an “as-built” post-construction
8 document signed and stamped by a licensed engineer, who made on-site construction
9 inspections, verifying that the liners were constructed as designed. All existing and new waste
10 storage facilities must be operated and maintained consistent with a CAFO’s NMP, which must
11 include a method to detect leaks. *Id.*, (S5, S3.A.2.k).

12 51.

13 The NRCS Waste Storage Facility performance standards are designed to prevent
14 infiltration and minimize leakage or seepage from the lagoons. *Testimony of Storman*. They
15 differ from septic system or waste treatment facility performance standards, which are designed
16 to infiltrate liquids. *Testimony of Storman, Freeman*.

17 52.

18 Soil permeability is used as the performance standard for lagoon liners. Permeability is a
19 measure of the soil/liner’s properties as liquid passes through. Many NRCS practices refer to
20 “specific discharges” (*i.e.*, leakage) in their criteria. Generally, different ponds constructed to the
21 same permeability standard can result in different volumes of discharges based on variables other

1 than permeability. Specific discharge calculations include liner thickness and depth of the liquid,
2 along with the liner's permeability, to predict the amount of liquid that would pass through a
3 particular storage pond. The greater the depth of the liquid, or the thinner the liner, the greater
4 the specific discharge even when permeability remains the same. *Ex. A-143*. Both permeability
5 and specific discharge are frequently reported in units of cm/sec, and the method for converting a
6 permeability measurement into a specific discharge calculation is available in an NRCS Ag
7 Waste Management Field Handbook (Appendix 10D).⁹

8 53.

9 It is undisputed that leakage from waste storage lagoons has contributed to increased
10 concentrations of pollutants in groundwater, and that site-specific factors affect how and when
11 lagoon waste seepage will impact water quality. In addition to permeability and specific
12 discharge calculations, other site-specific factors include the conductivity of soils below a
13 lagoon, the distance between a lagoon and the groundwater table, and the distance from a lagoon
14 to nearby wells. *Ex A-10, Testimony of Bell, Storman, Harrison*.

15 54.

16 CAFOs tend to be located mostly in shallow aquifer areas. *Testimony of Freeman*.
17 Groundwater is fairly shallow in the lower Yakima Valley area, and was found in one study to be
18 as little as five feet below ground surface in the Sunnyside area. *Testimony of Bell*. Whatcom
19 County also contains areas of shallow groundwater under agricultural and livestock areas. *Ex. A-*

21 _____
⁹ Appendix 10D calculates that a liner with a permeability of 1×10^{-7} cm/sec, in a pond with liquid 9 feet deep and a 1 foot thick liner, would have a specific discharge of 1×10^{-6} cm/sec.

1 9, A-10. Shallow aquifers can cause water quality problems in surface waters by transporting
2 excess nutrients and pathogens from groundwater to surface water bodies. *Testimony of Monks.*

3 55.

4 Nitrate contamination has not been documented at sites where properly constructed clay
5 or synthetic liners have been installed, although no research is available addressing whether
6 animal waste storage ponds built to current NRCS standards have leaked beyond the allowable
7 seepage rate included in their design criteria. *Ex. I-81, I-82, Testimony of Harrison.*

8 56.

9 Expert testimony was conflicting regarding the volume of specific discharge, and the
10 resulting threat to groundwater, that can reasonably be expected from a “typical” waste storage
11 facility covered by Washington’s CAFO General Permit. We find the testimony of Ecology’s
12 and Intervenor’s experts more credible on this point. CARE’s expert’s estimated discharge
13 volumes were calculated using waste treatment facility standards (designed to infiltrate) rather
14 than waste storage facility standards (designed to prevent infiltration), resulting in an
15 unrealistically high estimate of leakage. *Ex. I-79, Testimony of Freeman, Bell.*

16 57.

17 Weekly inspections of manure, litter, and process wastewater impoundments are
18 required. The inspection must note the liquid level in the impoundment as indicated by the depth
19 marker. *Ex. E-1 (S1.D.1.c).* CAFOs must develop a process for anticipating the storage level in
20 the lagoon. If an inspection shows the liquid is below the expected level, the permittee must

1 investigate immediately. If there is a leak, the permittee must take immediate action to stop the
2 leak and notify Ecology. *Ex. E-1* (S3.A.2.k., S5).

3 58.

4 Although the permit requires CAFOs to develop a lagoon leak detection method as part
5 of their NMPs, it does not specify a particular process or standard for detecting leaks. *Ex. E-1*
6 (S3.A.2.k). No additional external standards currently exist for detecting lagoon leaks.

7 *Testimony of Hancock.* The EPA CAFO Rule does not require CAFOs to use a lagoon leak
8 detection process, and the previous Dairy General Permit did not require one. *Testimony of*
9 *Selby.* An informal interagency livestock technical advisory group is developing guidance for
10 using lagoon level markers for leak detection under the CAFO General Permit, and conservation
11 districts and NRCS are working to formalize the guidance.¹⁰ *Testimony of Prest.* Ecology
12 determined that any attempt to specify in the permit a generally applicable leak detection process
13 appropriate in all situations would likely create inadvertent loop holes. Ecology anticipates that
14 compliance with this permit provision will be determined by comparing the process included in a
15 CAFO's NMP against standard engineering practices. The procedure would need to address all
16 the variables relevant to calculating mass/water balance. *Testimony of Selby.*

17 59.

18 The purpose of the lagoon depth measurement provision is to detect catastrophic leaks. It
19 was undisputed that the permit will be helpful in detecting significant leaks, and that discharge

20 ¹⁰The Interagency Livestock Technical Advisory Committee (ILTAG) is an informal group of participants from
21 various public agencies involved with livestock management, including Ecology, US Department of Agriculture,
and local conservation districts. It meets periodically to provide education and technical assistance to one another in
an effort to improve water quality protection activities. ILTAG has previously developed a fact sheet on soil
sampling following NRCS standards. *Testimony of Prest.*

1 volumes resulting from expected seepage rates are not likely to be detected by visual inspections
2 or lagoon depth measurements. *Testimony of Selby, Bell, Storman.*

3
4 Environmental Monitoring Requirements

5 60.

6 The CAFO General Permit employs an environmental monitoring regime for Large
7 CAFOs¹¹ to demonstrate whether their NMPs are effectively treating nutrients in the soil of land
8 application areas to protect groundwater quality. *Ex. E-1 (S4.C).* The permit requires Large
9 CAFOs to develop a soil sampling and analysis plan, and to include the plans in their NMPs. *Id.*
10 (S4.C.1.a). The permit specifies when, where, and how soil samples must be collected and
11 analyzed (S4.C.1.b-c), providing that Large CAFOs must perform annual sampling of land
12 application areas in the fall and testing for nitrate-N levels. It also requires Large CAFOs to
13 report their sampling results annually as part of their annual report to Ecology. *Id.* (S4.C.1.d).

14 61.

15 The permit does not require permittees to conduct surface water or groundwater
16 monitoring, to take soil samples in facility production areas, or to test for bacterial contamination
17 such as fecal coliform. However, a Large CAFO may choose to use groundwater monitoring
18 instead of soil monitoring. *Ex. E-1 (S4.C.2), Testimony of Kolesseus, Storman.*

19
20
21 ¹¹ Large CAFOs are defined in Appendix 2 of the permit, based on the number of animals stabled or confined by the operation (*e.g.*, 700 mature dairy cows; 1000 cattle other than mature dairy cows or veal calves; 30,000 laying hens or broilers).

1 62.

2 CARE's expert witness in engineering, Dr. Bruce Bell, opined that the permit's soil
3 monitoring requirements are inadequate to protect water quality. His opinion was based on the
4 fact that soil monitoring is not required in production areas or under lagoon areas, that the permit
5 does not require soil samples to be tested for other constituents such as fecal coliform, and that
6 the permit's soil sampling protocol would not detect contaminants discharged in manure injected
7 below the testing level. Dr. Bell's opinion was also based on his belief that surface and
8 groundwater monitoring offer better information than soil monitoring to determine the
9 effectiveness of the best management practices in CAFO NMPs. While acknowledging that the
10 EPA CAFO Rule does not require either surface or groundwater monitoring, Dr. Bell
11 recommends routine surface water monitoring for its diagnostic value, as it can trigger
12 investigations when sample results reach certain action levels. He further recommends surface
13 water monitoring after discharge events because it has been found useful in other Washington
14 NPDES permit contexts for triggering corrective actions when necessary. *Testimony of Bell.*

15 63.

16 CARE's expert hydrogeologist, John Monks, also opined that soil monitoring is not
17 adequately protective of water quality. His opinion was based on a review of scientific literature
18 suggesting that land applications can contribute to contamination even when applied at
19 agronomic rates, and on his belief that the amount of nitrogen in field soils is only one part of the
20 concern from CAFO facilities. *Ex. A-28.* Other concerns include pollution caused by seepage
21 from lagoons, livestock production areas, irrigation water, and injection of manure below

1 detectable depths. Monks recommends a groundwater monitoring regime that includes monthly
2 groundwater sampling during the first year to create a baseline of data and establish seasonal
3 variations, followed by quarterly sampling thereafter. *Testimony of Monks.*

4 64.

5 Early drafts of the permit contained groundwater monitoring requirements for Large
6 CAFOs instead of soil monitoring. *Ex. A-131, Testimony of Kolesseus.* The draft permit was
7 revised constantly during the spring of 2004, and by the fall of 2004, soil monitoring had
8 replaced groundwater monitoring as the primary form of required water quality monitoring. *Ex.*
9 *A-64, Testimony of Kolesseus.* Various drafts of the soil monitoring conditions included numeric
10 nitrate-N level goals for soil sample results, with specified levels indicating a low risk of reduced
11 groundwater quality and a high risk of nutrients leaching to groundwater. At some point, the soil
12 monitoring provisions included a specific trigger that would lead to groundwater monitoring. *Ex*
13 *A-64, A-69. Testimony of Kolesseus, Storman.*

14 65.

15 Revisions to the draft permit reflected Ecology's consideration of the environmental risks
16 and benefits of various monitoring options, and the costs of each option in relation to its risks
17 and benefits. *Ex. A-41, A-49, A-53, A-54.* At the conclusion of the permit development process,
18 Ecology concluded that soil monitoring is no less protective of groundwater quality than
19 groundwater monitoring, and that it has the potential to be more protective because it allows for
20 preventative measures to be taken in response to sample results before contamination reaches
21 groundwater. *Testimony of Kolesseus, Selby.*

1 *Soil Sampling*

2 Ecology determined that soil sampling in production areas is unnecessary because of the
3 permit's requirement to divert clean water from CAFO facility production areas. *Testimony of*
4 *Storman, Ex. E-1 (S3.A.2.c)*. Production areas, which include animal confinement areas,
5 manure and raw materials storage areas, and manure containment areas, comprise a small portion
6 of the total area used by a CAFO. *Testimony of Freeman*. Ecology also determined that
7 analyzing soil samples for fecal coliform is unnecessary because fecal coliform bacteria does not
8 live very long in soil. *Testimony of Prest*. Testing the soil beneath the storage lagoons is likely
9 to compromise the integrity of the lagoon structure and produce leakage. *Testimony of Storman*.

10 66.

11 Sampling soil for residual nitrate-N in the fall, at the end of the growing season, is the
12 most directly relevant time frame for determining how much nitrogen remains available to leach
13 during the wet season and for calculating agronomic application rates for the next growing
14 season. *A-33, Testimony of Storman, Harrison*.

15 67.

16 The depths specified in the permit for soil sampling (one foot for western Washington
17 and two feet for eastern Washington) are correlated to the typical root zones of crops grown on
18 either side of the state. They were also based on an Oregon State University Extension post-
19 harvest study. *Testimony of Storman*. Manure injection applications are typically done using
20 two-foot long shanks (rippers) to fracture the soil, with shorter tubes attached that inject manure
21 approximately four to eight inch below the surface. *Testimony of Prest*. Producers have no

1 reason to inject manure below the root zone of plants, because the nutrients would not be
2 available for the crops, and fuel costs would be much higher for the deeper injection. *Testimony*
3 *of Harrison.*

4 68.

5 The permit does not explicitly require permittees to take responsive measures if soil
6 sample results indicate higher than expected nitrate levels. *Testimony of Storman.* Ecology
7 would not view the discovery of any particular level of nitrates in soils as a discharge or non-
8 compliance event requiring immediate notification to Ecology. However, Ecology expects that
9 permittees will update their NMPs to adjust their application rates if sample results are higher
10 than anticipated. *Testimony of Selby.* NMPs must be updated and implemented if the monitoring
11 shows that water quality may be at risk. The updated NMPs must ensure that groundwater
12 quality standards are not violated. *Ex. E-1 (S3.D.3, S1.B.)* NMPs must address the timing of
13 manure applications as part of a CAFO's agronomic rate calculations, and the permit directs that
14 soil sample results are to be used in determining application rates for manure, litter, and other
15 wastewater. *Ex. E-1 (S3.A.3.a, S3.A.3.c).* Approved NMPs all include information that says
16 operators should not land apply manure if soil test results are not as expected. *Testimony of*
17 *Selby.*

18 69.

19 The permit requires soil sampling plans to be developed using appropriate NRCS CP
20 Standards, Technical Notes and Guidance or Extension Publications. *Ex. E-1 (S4.C.1.a).* Oregon
21 State University Extension Service has produced a guidance document for interpreting post-

1 harvest soil nitrate test results and for adapting nutrient management practices in response to test
2 results. The bulletin, entitled Post-harvest Soil Nitrate Testing for Manured Cropping Systems
3 West of the Cascades, contains specific management actions to be implemented in Western
4 Washington when post-harvest nitrate-N values fall within certain ranges or exceed certain levels
5 (e.g., nitrate-N values in the 20 to 45 ppm range, or greater than 45 ppm, on silage corn fields;
6 and in the 15-30 ppm range, or greater than 30 ppm, on fields of grass for hay or silage). *Ex. I-*
7 *55, Testimony of Harrison.*

8
9 *Surface Water Monitoring*

10 70.

11 CAFOs operate in an open system, meaning that their impact on surface and groundwater
12 is subject to the spatial and temporal flow variations from other nearby point and non-point
13 sources of pollution. *Testimony of Freeman.* Routine surface water monitoring, in the absence
14 of a specific discharge, would not provide useful information because there are so many different
15 sources of contaminants. It would not be able to distinguish between the various contributing
16 sources, some of which could be naturally occurring (e.g, migrating herds of wild elk or flocks of
17 waterfowl) or coming from non-regulated sources (e.g., fertilizer run-off or leaking septic
18 systems from adjacent farms or homes). *Testimony of Harrison.*

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73.

Ecology does not require groundwater monitoring in any of its other general permits. Some eastern states are conducting groundwater monitoring, but it is done by the state rather than as a requirement of a regulated entity. *Testimony of Storman*. The EPA CAFO Rule does not require surface or groundwater monitoring. *Testimony of Bell*.

74.

The information that would be provided from groundwater monitoring would not be helpful to efforts to clean up areas that are already known to be contaminated, such as the Sumas and Yakima aquifer areas in Whatcom and Yakima counties. It would simply confirm what Ecology already knows. *Testimony of Selby*.

75.

Dairies and other CAFOs are not the only source of nitrate contamination in the watersheds where they are located. Septic tanks and drain fields, commercial fertilizers and other common agricultural practices that are not regulated by discharge permits, all contribute nitrogen contamination. *Ex. E-2, Testimony of Harrison, Bell, Monk*. Even scientific studies cannot definitively identify sources of contamination, in part because nitrogen compounds are found in virtually all soils and can be incorporated into pre-existing organic compounds and released at later dates. While studies often identify a multitude of contributing sources, they are often unable to trace individual sources. *Ex. A-96, Testimony of Mullen*. Because flows can change so much over time, and because distinguishing the particular sources of contaminants

1 common in agricultural areas, groundwater monitoring has historically provided very minimal
2 benefit for managing livestock nutrients. *Testimony of Harrison.*

3 76.

4 Groundwater monitoring costs include those involved in conducting the site-specific
5 analysis of possible sources of contamination and characterizing the surface/groundwater
6 interactions in order to determine where to place the network of monitoring wells. *Testimony of*
7 *Mullen.* The cost of groundwater monitoring wells is dependent on the depth and drilling
8 method used, but is approximately \$2,000 per well for a 20-foot deep well. Costs of sampling
9 and analyzing sample results vary, but testimony about on-going groundwater monitoring efforts
10 at CAFO facilities indicate annual costs would be in the range of \$12,000 to \$40,000. *Testimony*
11 *of Monks, Freeman.*

12
13 Any Finding of Fact deemed to be a Conclusion of Law is hereby adopted as such.

14
15 CONCLUSIONS OF LAW

16 1.

17 The Board has jurisdiction over the parties and the issues in this case pursuant to RCW
18 43.21B.110(1)(c). The burden of proof is on the appealing parties as to each of the legal issues
19 raised challenging the validity of the permit. WAC 371-08-485. The Board considers the matter
20 de novo, giving deference to Ecology's expertise in administering water quality laws and on
21 technical judgments involving complex scientific issues. *Port of Seattle v. Pollution Control*

1 *Hearings Board*, 151 Wn.2d 568, 593-94, 90 P.3d 659 (2004). The Board’s Findings of Fact are
2 based on a preponderance of the evidence. WAC 371-08-485(2).

3
4 Permit Development Process

5 2.

6 The Board concludes that the permit development process was lawful and reasonable.¹²
7 CARE’s extensive review at hearing of the progression of various permit conditions from draft to
8 final form, made in response to industry and other comments, fails to prove any unlawful or
9 inappropriate influence over the permit writing process. To the contrary, substantial evidence
10 demonstrated that the permit development process was open to the public, that Ecology made
11 reasonable and diligent efforts to reach out to a broad range of stakeholder groups, including
12 CARE, and was responsive to comments made by all sectors.

13
14 The specific aspects of the CAFO General Permit challenged at hearing are those
15 concerning public access to the records required under the permit, the enforceability of nutrient
16 management plans (NMPs), and the adequacy of the environmental monitoring requirements.
17 We address the challenges to each of these permit elements below.

18
19 Public Access to Records

20 _____
21 ¹² Although not explicitly raised as a legal issue in the appeal, much of the focus of CARE’s case at hearing was directed at challenging the permit development process. CARE argued that the process had been unduly influenced by industry; and, as a consequence, the permit’s conditions had been watered down to the detriment of environmental protection.

1 3.

2 Issue No. 8 in this appeal asks the Board to decide whether the permit violates federal
3 and state law by failing to provide public access to CAFO records.¹³

4 CARE contends that the CAFO General Permit shelters certain records from public
5 access by allowing them to be kept on-site at CAFO facilities rather than on file with Ecology.
6 They argue this provision conflicts with CWA public availability requirements. CARE further
7 objects to the characterization of certain types of information as sensitive or “confidential
8 business information” (CBI) because it will result in the redaction of such information from any
9 records released to the public. Some of this potentially redacted information, CARE argues, is
10 important for citizens to evaluate a CAFO’s compliance with effluent limitations. CARE
11 believes that citizens need public access to *all* the information connected to the permit because
12 they cannot rely on regulatory agencies to protect them. CARE seeks modification of the permit
13 to require regular reporting to Ecology of all facility inspection and operational records required
14 by Conditions S4.A.1 and S4.A.2, and for this Board to declare that the information contained in
15 all records required under this permit is publicly accessible.

16 4.

17 Ecology responds that documents do not have to be in Ecology’s possession to be “public
18 records” subject to disclosure, and that the permit allows interested citizens to obtain access to
19 records kept on-site by requesting that Ecology obtain them from the permittee. Ecology also
20 argues that the CWA and state law have similar exceptions to public disclosure requirements for

21 _____
¹³ Legal Issue No. 8 states: “Does the permit unlawfully fail to provide public access to facility inspection,
discharge, or records in violation of federal and state law?”

1 CBI that necessitates a case-by-case review rather than a blanket release of all records required
2 to be kept under the permit.

3 5.

4 Intervenor respondents argue that most of the operational information CARE seeks will be
5 reflected in the reports that CAFOs must file with Ecology. They also argue neither federal nor
6 state law mandates public disclosure of all information kept under a NPDES permit, and that the
7 information publicly available through the NMP and other reporting requirements provides
8 adequate information for the public to participate in coverage decisions and enforcement actions.

9 6.

10 We conclude that the permit satisfies the public participation requirements of the CWA,
11 as applied to the CAFO context by *Waterkeeper Alliance*. CARE has failed to prove that the
12 permit's record-keeping, reporting, and public disclosure scheme unlawfully denies the public
13 adequate information to participate meaningfully in permit coverage decisions or impermissibly
14 compromises the public's ability to bring citizen enforcement actions under the CWA. The
15 permit provides for public participation in the development, revision, and enforcement of the
16 standards, effluent limits, and plans connected with these NPDES permits by making Nutrient
17 Management Plans publicly available for review as part of the permit application and coverage
18 decision process. Citizens will also have access to CAFO discharge and annual reports filed with
19 Ecology, and have the opportunity to request any additional records kept on-site at CAFO
20 facilities. We are not persuaded that operational records are either effluent limits or otherwise

1 the functional equivalent of permits such that they should be treated, categorically, the same as
2 nutrient management plans under *Waterkeeper Alliance*.

3 7.

4 CARE points to no authority that would require CAFOs to file more, or different types
5 of, information with Ecology rather than keep it on-site. Additionally, CARE failed to
6 demonstrate how allowing CAFOs to keep on-going operational records, such as those required
7 to be kept under S4.A.2, on-site rather than on file at Ecology, will deny citizens access to the
8 information Ecology utilizes for its regulatory purposes. The testimony was undisputed that
9 when Ecology receives a public records request for records kept at a permittee's facility, its
10 procedure is to request the information from the permittee. The permit, in turn, requires CAFOs
11 to make all records available to Ecology or Agriculture upon the agency's request. Failure to do
12 so is a violation of the permit.

13 8.

14 CARE is less concerned with where the records are kept than with how it anticipates
15 Ecology will apply the confidential business records (CBI) exception in response to public
16 records requests. CARE asserts application of this exemption will result in the redaction of
17 certain kinds of information of interest to them and necessary to enforce state and federal water
18 pollution laws. To this end, CARE focused its presentation at hearing on why certain types of
19 information should not be considered CBI and should, as a matter of law, be declared publicly
20 available to citizens under the CAFO General Permit. We decline to engage in the kind of
21 declaratory ruling CARE seeks.

1 9.

2 Initially we note that neither the CWA nor Chapter 90.48 RCW mandate the public
3 disclosure of all records, operational or otherwise, required to be kept under waste discharge
4 permits. Moreover, both the CWA and state law contain similar exceptions to public records
5 disclosure requirements in order to protect confidential or propriety information. *33 U.S.C. §*
6 *1318(b)(2), RCW 43.21A.160.* Ecology’s NPDES and state waste discharge regulations also
7 both provide that Ecology “shall protect any information (other than information on the effluent)
8 contained [in applications and NPDES permit records] as confidential upon a showing that such
9 information, if made public, would divulge methods or processes entitled to protection as trade
10 secrets of such person.” *WAC 173-220-080, WAC 173-226-160.*

11 10.

12 We conclude that the permit’s case-by-case approach to public disclosure of information
13 contained in CAFO records required to be kept under this permit is reasonable and required by
14 state law. When an agency such as Ecology receives requests for disclosure of public records, it
15 must respond as directed by state law. *Smith v. Okanogan County*, 100 Wash.App. 7, 12, 994
16 P.2d 857 (2000). It is imperative that government agencies timely comply with the mandates of
17 public disclosure laws. *Spokane R&D Fund v. City of Spokane*, 155 Wn.2d 89, 100, 117P.3d
18 1117 (2005)(previously the Public Disclosure Act, or PDA, now codified as the Public Records
19 Act). Generally, agencies may withhold requested documents they believe fall under an
20 exemption to the public records/disclosure laws, at least until a superior court has an opportunity
21 to review the request and claimed exemption. *Dawson v. Daly*, 120 Wn.2d 782, 794, 845 P.2d

1 995 (1993). More specifically, state law requires the Director of Ecology to consider requests
2 for confidentiality of certain information on a case-by-case basis, and to grant those requests if
3 doing so would not be detrimental to the public interest and is otherwise within accord with the
4 agency's policies and purposes. *RCW 43.21A.160*.

5 11.

6 We further conclude that it is beyond this Board's jurisdiction to grant the relief sought
7 by CARE to interpret, in a declaratory fashion, the scope of confidential business information
8 under RCW 43.21A.160 as excluding some or all of the information contained in the records
9 required by this general permit. We note, however, that if Ecology's administration of this
10 permit provision results in untimely, inadequate, or impermissible disclosures, the affected
11 parties have adequate alternative remedies available. *See e.g.* RCW 42.56.530 (providing that a
12 person denied a record on the basis of a claimed exemption may request the attorney general to
13 review the matter); RCW 42.56.550 (providing judicial review in superior court when records
14 have been improperly withheld or untimely provided, including the possible award of costs,
15 attorney fees and penalties); and RCW 42.56.540 (providing that an agency or person named in a
16 disputed record may seek review by a superior court prior to disclosure).

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1 Nutrient Management Plans

2 12.

3 Issue No. 19 in this appeal addresses the enforceability of the standards and effluent
4 limitations contained in nutrient management plans (NMPs).¹⁴ CARE argues that the permit
5 amounts to an impermissible self-regulatory program because the permit itself lacks specificity
6 on important issues and instead relies on the NRCS-FOTG or equivalent BMPs. CARE objects
7 to the reliance on NRCS-FOTGs because it believes they are too vague to ensure CAFOs will not
8 violate effluent limits or degrade water quality and because some of the NRCS-FOTG practices
9 incorporated into the NMP’s effluent limits are written as “guidance” rather than as mandatory
10 requirements.

11 13.

12 Ecology and the Intervenors respond that the permitting scheme is fundamentally
13 different than previous schemes rejected by this Board and the Ninth Circuit as “self-regulatory”
14 because Ecology must review and approve NMPs prior to granting coverage. They argue that
15 the permit contains specific minimum requirements for NMPs, and that the NRCS-FOTG
16 practice standards incorporated into the permit through the NMPs are detailed and rigorous.
17 Finally, they argue that the FOTG standards require compliance with federal, state, and local
18 laws and regulations, which include the permit’s prohibition on discharges.

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21 ¹⁴ Legal Issue No. 19 states: “Does the Permit fail to provide enforceable standards or limitations by relying on the development of nutrient management plans that themselves contain vague, ambiguous or otherwise undefined terms?”

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14.

We conclude that Ecology's reliance on the NMPs is lawful and reasonable. We reject CARE's argument that the permit constitutes an impermissible "self-regulatory" program such as the Board invalidated in an earlier review of the Industrial Stormwater General Permit. See, *Puget Soundkeeper Alliance v Ecology*, PCHB No. 02-162, 02-163 (2003). Unlike other general permits that have been rejected by this Board and the courts as impermissibly self-regulatory, the CAFO General Permit requires all covered CAFOs to submit their NMPs to Ecology, subject them to public review and comment, and receive approval of their NMP prior to being granted coverage under the permit. Additionally, all Dairy CAFO NMPs must meet the standards for nutrient management planning established by the Washington Conservation Commission (S3.A.4), meaning that, in practice, Dairy CAFO NMPs will also be reviewed and certified by local conservation districts before being submitted to or approved by Ecology. We have also previously concluded in this case that the adequacy of an individual CAFO's NMP may be appealed within the scope of an appeal of a coverage decision. *CARE v. Ecology, et. al.*, PCHB 06-057, *Order on Motions* (July 31, 2007). We conclude that this multi-step review process is adequate to ensure that CAFOs covered under the permit will develop NMPs that satisfy the minimum requirements and contain required effluent limits.

15.

The NMP requirements in the CAFO General Permit are consistent with the NMP requirements contained in the EPA CAFO Rule and, in some respects, go beyond the federal minimum requirements. *40 C.F.R. 122.42(e)(1)(i)-(ix)*. The permit requires that NMPs address

1 the most common and most significant causes of CAFO waste discharges. We conclude that,
2 with one clarification (discussed below), the permit’s NMP conditions are sufficient to ensure
3 that CAFOs develop and implement standards and effluent limitations that are both enforceable
4 and protective. We reach this conclusion based on the permit’s specificity regarding the
5 minimum elements that must be addressed in an NMP, coupled with the requirement that NMPs
6 must conform to NRCS-FOTGs or equivalent BMPs approved by Ecology.

7 16.

8 On the basis of its analysis of available studies and other data, Ecology determined that
9 the NRCS-FOTG standards were the best available standards to protect water quality and that
10 they would significantly reduce CAFO discharges. The weight of the evidence presented to the
11 Board supports this conclusion. We are not persuaded that the NRCS-FOTG practice standards
12 related to agronomic rates or lagoon design are impermissibly vague or unenforceable, and
13 CARE identified no alternative standards that Ecology either failed to consider or wrongly
14 rejected. While the FOTGs may have been developed by the NRCS as “guidance” documents,
15 we conclude that the permit’s requirement that NMP’s “must conform” to them effectively
16 transforms the FOTG standards from permissive suggestions into mandatory performance
17 requirements where they are applicable.

18 17.

19 One area where we find the permit lacking sufficient clarity is the requirement related to
20 updating NMPs. The permit requires CAFOs to update their NMPs either in anticipation of, or
21 in response to, certain situations. One of those circumstances is when environmental monitoring

1 shows that water quality “may be at risk.” The permit directs that in such situations, a CAFO’s
2 NMP must be updated to ensure that groundwater effluent limitations are met. We find that
3 although the permit requires updated NMPs be submitted to and approved by Ecology, it
4 contains no timeframe in which this must happen.¹⁵ It also does not explicitly prohibit
5 additional land applications during the open-ended update and approval process. We conclude
6 that permit’s failure to establish a timeframe for the submission and approval of an updated NMP
7 in response to elevated nitrate-N soil sample results, coupled with the lack of a clear prohibition
8 on additional land applications during the updating process, creates an unreasonable risk of
9 environmental harm.

10 18.

11 While it could be inferred that the update needs to be done before any future land
12 applications are made, neither the permit nor any NRCS-FOTG documents explicitly prohibit
13 further applications before the agronomic rate is recalculated and the NMP is updated.¹⁶ The
14 permit should be read that no further land applications may be made once monitoring shows that
15 water quality is at risk until after the NMP update required by Condition S3.D.3 is approved.
16 With this clarification, the permit’s approach to responding to elevated soil nitrate-N levels is
17 permissible.

18 ¹⁵ The permit requires CAFOs to submit, and Ecology to approve, updated plans prior to implementing certain
19 *voluntary* operational changes (S3.D.1), but it does not address how long a CAFO has to develop, submit, and
20 implement an updated NMP before making the operational changes found *necessary* to respond to risks identified by
21 soil monitoring. This Board earlier clarified that, as a matter of law, CAFOs cannot engage in certain facility
expansions or modifications, production increases, or process modifications, unless an updated NMP has been
submitted to and approved by Ecology in advance of the change. *See* Board’s April 20, 2007, letter re: summary
judgment motions and July 31, 2007 Order on Motions.

¹⁶ The relevant WSU Extension Publication directs operators to either reduce or eliminate lagoon water and manure
applications, depending on sample results, and to “plan to reduce manure-N application by 10 to 25%” or “25 to
40%” depending on sample results. Ex. I-55.

1 Environmental Monitoring Requirements

2 19.

3 This appeal includes multiple challenges to the permit’s environmental monitoring
4 requirements. CARE alleges that Ecology improperly abandoned a more suitable monitoring
5 regime and that the permit’s reliance on soil monitoring is inadequate to protect surface and
6 groundwater. Issue No. 9 addresses whether federal or state law requires the permit to include
7 surface water monitoring.¹⁷ Issue No. 17 asks the Board to decide whether the permit fails to
8 protect surface waters that are hydrologically connected to groundwater, and Issue No. 18 asks
9 whether the lack of a groundwater monitoring requirement fails to protect waters of the State in
10 violation of RCW 90.48 and its implementing regulations.¹⁸

11 20.

12 CARE first argues that water quality monitoring is needed to check the efficacy of NMPs
13 and BMPs at preventing discharges. It contends that soil monitoring is inadequate to do this and
14 should be supplemental to receiving water monitoring of both surface and groundwater. CARE
15 also argues that the permit fails to ensure compliance with water quality standards because it
16 does not require NMPs to include an assessment of the location of waterways and potential
17 impacts to them. CARE believes Ecology, not CAFOs, should determine agronomic application

18
19 ¹⁷ Legal Issue No. 9 states: “Does the permit violate the federal Clean Water Act, or state law, Chapters 90.48 or 90.64 RCW, or their implementing regulations, by failing to require:

- 20 a. Regular monitoring upstream and downstream of permitted facilities; or
21 b. Monitoring immediately during discharge events at points of known discharges?”

¹⁸ Legal Issue No. 17 states: Does the Permit fail to prohibit, and monitor for, pollution of groundwater that is hydrologically connected to surface waters in violation of the federal Clean Water Act and RCW 90.48 and its implementing regulations.” Legal Issue No. 18 states: “Does the final Permit fail to require groundwater monitoring and thereby fail to protect waters of the State in violation of RCW 90.48 and its implementing regulations?”

1 rates because this determination is what provides the agricultural stormwater exemption from
2 compliance with groundwater regulations. CARE argues that groundwater monitoring is not
3 cost-prohibitive and that it should be required in light of CAFO's historical and on-going
4 contributions to groundwater contamination. It asks the Board to direct Ecology to require
5 groundwater monitoring if we find that Large CAFOs, as a class, have previously contaminated,
6 are presently contaminating, or have a reasonable likelihood of contaminating groundwater.¹⁹

7 21.

8 Ecology and the Intervenors respond that the permit's conditions, when viewed in their
9 entirety, are adequately protective of water quality. They argue that past practices of CAFOs are
10 not determinative of whether current permit conditions will protect waters of the state. They
11 contend properly sited, designed and managed CAFO facilities can be operated to protect water
12 quality, and that the permit ensures proper management and prevention of water quality
13 degradation.

14 22.

15 Ecology and Intervenors also argue that surface water monitoring is inappropriate in the
16 CAFO General Permit. They contend that because the permit uses a "no discharge" approach
17 (rather than authorizing continuous discharges as other NPDES permits do), discharge *reporting*
18 is more appropriate than regular surface or groundwater monitoring. Their experts opine that
19 CARE's recommended monitoring regime would provide little meaningful information in return
20 for the high cost of obtaining it. They also believe that soil sampling offers a better way to

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¹⁹ CARE also argued in its pre-hearing brief that the permit should require Large CAFOs to use certified samplers to conduct their water quality sampling, but it appears to have abandoned this point at hearing.

1 *prevent* groundwater contamination because, unlike surface or groundwater monitoring, it
2 provides early detection of potential problems, before pollution enters receiving waters.

3 23.

4 While there is little doubt past practices of dairies and other livestock operations have
5 contributed to surface and groundwater contamination problems in areas of the State, it does not
6 follow that the CAFO General Permit must require surface and groundwater monitoring to be
7 protective of state waters.

8 24.

9 General permits are an alternative to individual NPDES discharge permits. They allow
10 regulators to efficiently administer a permit process covering large numbers of similar activities
11 related to a point source category, in lieu of individual permits being issued to each discharger.
12 *WAC 173-220-030*. Operators covered by the CAFO General Permit must conduct their
13 operations in compliance with the terms and conditions set forth in the permit. We conclude that
14 a preponderance of the evidence demonstrates that proper implementation of the permit's
15 requirement to follow NRCS-FOTG or equivalent best management practices will prevent
16 unauthorized discharges, and that compliance with the permit's other discharge reporting,
17 inspection, record keeping, and soil monitoring requirements will generally protect water quality.
18 We further conclude the suite of general permit conditions is adequate to identify high-risk
19 operations, and note that Ecology can order additional monitoring and other conditions, or
20 require coverage under an individual permit, when site-specific situations warrant. Ecology's
21 conclusion that groundwater requirements are more effectively evaluated and implemented on a

1 case-by-case basis, rather than imposed uniformly on all CAFOs covered under the general
2 permit, is consistent with the approach taken by EPA in its CAFO Rule and upheld by the
3 *Waterkeeper* court. *WaterkeeperAlliance*, 399 F.3d at 515.

4 25.

5 Ecology considered and rejected alternative monitoring requirements, including various
6 groundwater monitoring options. It considered the costs along with environmental risks and
7 benefits in reaching its conclusion to require soil monitoring and other conditions protective of
8 groundwater in lieu of groundwater and/or surface water monitoring. Given the context of this
9 permit as a “no discharge” permit, we conclude Ecology was reasonable in determining that
10 regular surface water monitoring is not necessary to protect water quality. We further conclude
11 that Ecology’s decision not to require groundwater monitoring in the CAFO General Permit is
12 reasonable in light of the complexity, site-specific nature, and limited environmental benefit to
13 be gained relative to the likely costs of such a monitoring regime.

14 26.

15 We are not persuaded by CARE’s contention that Ecology and Agriculture will fail to
16 enforce the CAFO General Permit and reject this premise as a reason to require groundwater
17 monitoring. The evidence presented at hearing demonstrates that the agencies are actively
18 undertaking routine and complaint-driven inspections related to CAFO operations, and we also
19 take judicial notice of additional history of enforcement activity. This Board has heard nearly
20 twenty livestock waste water quality penalty appeals over the past fifteen years, most of which
21 involved Ecology enforcement actions against dairies in Whatcom, Yakima, Pierce, Lewis,

1 Clark, and Thurston counties for improper waste management practices that resulted in water
2 quality violations. Penalties issued by Ecology in those cases ranged from \$2,000 to more than
3 \$50,000 each. *See e.g.*, PCHB Nos. 92-107, 94-121, 96-162, 97-121, 98-073, 99-029, 99-31&40,
4 99-094, 99-095, 99-096, 99-098, 99-107, 99-108, 99-130, 99-146, 99-197, 00-019, 00-23, 01-
5 111.

6 Any Conclusion of Law deemed to be a Finding of Fact is hereby adopted as such.

7 **ORDER**

8 The CAFO NPDES and State Waste Discharge General Permit issued by Ecology on
9 June 21, 2006, is AFFIRMED, with the clarification that whenever the environmental monitoring
10 required in Condition S4.C shows that water quality may be at risk, no further land applications
11 may be made until after the nutrient management plan update required by Condition S3.D.3 is
12 approved by Ecology.

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14 DATED this 1st day of August 2007.

15 **POLLUTION CONTROL HEARINGS BOARD**

16 Andrea McNamara Doyle, Presiding

17 William H. Lynch

18 Kathleen D. Mix
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