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Washington State
Court of Appeals
Division Two

June 29, 2021

IN THE COURT OF APPEALS OF THE STATE OF WASHINGTON

DIVISION II

WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU,

Respondents,

v.

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY,

Petitioner.

PUGET SOUNDKEEPER ALLIANCE; COMMUNITY ASSOCIATION FOR RESTORATION OF THE ENVIRONMENT (CARE); FRIENDS OF TOPPENISH CREEK; SIERRA CLUB; WATERKEEPER ALLIANCE; and CENTER FOR FOOD SAFETY,

Respondents.

PUGET SOUNDKEEPER ALLIANCE; COMMUNITY ASSOCIATION FOR RESTORATION OF THE ENVIRONMENT (CARE); FRIENDS OF TOPPENISH CREEK; SIERRA CLUB; WATERKEEPER ALLIANCE; and CENTER FOR FOOD SAFETY,

Respondents,

v.

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY,

Petitioner.

No. 52952-1-II
(consolidated with No. 53144-5-II)

PUBLISHED OPINION

CRUSER, J. — Puget Soundkeeper Alliance, Community Association for Restoration of the Environment, Friends of Toppenish Creek, Sierra Club, Waterkeeper Alliance, and Center for Food Safety (collectively, Soundkeeper) appeal the Pollution Control Hearing Board's (PCHB) order on partial summary judgment and its ruling following the administrative hearing approving the Washington Department of Ecology's (Ecology) Concentrated Animal Feeding Operation (CAFO) Waste Discharge General Permit (state only permit) and "Combined" National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General CAFO Permit (combined permit). Soundkeeper argues that the PCHB erred because (1) the permit conditions do not satisfy the "all known, available, and reasonable methods of prevention, control, and treatment" (AKART) requirement with respect to discharges emitted from manure storage lagoons, composting areas, and animal pens and corrals (2) the permit conditions do not ensure that discharges from CAFOs will not violate water quality standards, (3) the permits do not provide for adequate monitoring, (4) the permits fail to provide for public comment on site-specific nutrient plans prior to issuance, and (5) Ecology was required to consider the effects of climate change in drafting the permits but failed to do so.

The Washington State Dairy Federation and the Washington Farm Bureau (collectively, Dairy Federation) appeal the PCHB ruling affirming the use of T-SUM 200 as a standard for determining when to begin spring field application of manure. The Federation argues that (6) T-SUM 200 does not satisfy AKART requirements as applied to CAFOs in Eastern Washington.

We hold that (1) the permit conditions meet AKART requirements for animal pens and corrals, but not for existing manure lagoons or composting areas, (2) the permit conditions do not protect all covered activities from violating water quality standards, (3) monitoring beyond the soil

sampling and visual inspections required by the permits is necessary to ensure compliance, (4) the combined permit fails to make site-specific information regarding how a CAFO will comply with permit requirements available for public comment and review as required under federal regulations, (5) Ecology had a responsibility pursuant to the State Environmental Policy Act (SEPA), ch. 43.21C RCW, to consider the effects of climate change before issuing the permit, and (6) the T-SUM 200 standard for field application satisfies AKART requirements as applied to Eastern Washington.

Accordingly, we affirm in part and reverse in part and remand the permits to Ecology for rewriting consistent with this opinion.

FACTS

I. CAFOs AND WATER CONTAMINATION

A Concentrated Animal Feeding Operation or "CAFO" is a type of agricultural facility that confines and feeds animals for a minimum of 45 days in a 12-month period in a designated lot or facility that is not otherwise used to produce crops or vegetation. 40 C.F.R. § 122.23(b)(2). CAFOs vary in size depending on the number of animals confined at a facility. 40 C.F.R. § 122.23(b)(2), (6). And they may house animals such as dairy cows, sheep, hens, or other types of livestock and poultry. 40 C.F.R. § 122.23(b)(2), (6). Dairies represent one type of animal feeding operation, but not all dairies are CAFOs. As of July 5, 2018, there were 377 dairies operating in Washington, of which 230 were CAFOs.

CAFOs produce byproducts, including manure, litter (manure produced by poultry), and process wastewater (a form of liquid waste created during production of animal-based products). "[O]nce the appropriate time is reached during spring and crops are starting to grow,"

Administrative Record (AR) at 3803, these byproducts are used as fertilizer and applied to crop land as a source of nutrients. The crops may, in turn, become feed for the confined animals.

Manure is produced year-round and accumulates over the winter. While crops are not growing or the growth rate is slow due to low temperatures, liquid manure and other liquid waste byproducts are stored in lagoons or upright tanks. Most lagoons are "earthen lagoons" composed of "compacted earth and clay" that forms a barrier to contain the liquid waste. *Id.* at 4034. Some CAFOs separate manure solids from the liquid waste. Solid manure is stacked in composting areas to dry out for use in land application or to be transformed into a "saleable product." *Id.* at 3872.

Both lagoons and composting areas have the potential to emit discharges that contain pollutants. Multiple studies have determined that lagoons leak waste into soil, and for some lagoons, this leakage has resulted in a documented impact on groundwater. Although waste from composting areas is less likely to seep into soil because this activity is typically conducted in dry climates, composting areas present a potential source of discharge that could likewise detrimentally impact groundwater. In addition to composting areas and lagoons, manure may also temporarily accumulate in pens and corrals where animals are confined. However, because of compaction by cattle, the surface forms a natural barrier between the contaminants in manure and the soil below.

Manure, litter, and process wastewater contain nutrients such as nitrogen and phosphorous. In a process called "mineralization," organisms within soil break down organic nitrogen and convert it to an inorganic form that a plant can then use. *Id.* at 7034. Phosphorous must similarly undergo a mineralization process to convert the organic form of the nutrient to one that is available for plant uptake.

Manure, however, is an "imbalanced fertilizer," meaning the amount of nutrients provided by the manure does not equal the amount of nutrients the crop needs or is able to use. *Id.* at 7036. As a result, excess nitrate, which is "highly mobile" in soil, migrates below the root zone where it will leach into groundwater and eventually reach surface water. *Id.* at 7035. Phosphorous binds to soil and is unlikely to leach into groundwater, but it can move off-site in runoff from fields and reach surface water.

Nitrates have contaminated public and private drinking water in Washington. Although not directly toxic when consumed by most humans, nitrates are hazardous when consumed by vulnerable populations.

Studies conducted in the lower Yakima Valley and in the Sumas-Blaine aquifer in Whatcom County reveal the degree to which CAFO activity in those regions has affected the concentration of nitrate in groundwater. In the Yakima Valley, over 20 percent of the private wells sampled during the course of the study did not meet safe drinking water standards due to nitrate contamination. The Environmental Protection Agency (EPA) concluded that CAFOs are a source of nitrate in that area and that "dairies and other livestock operations contribute 65 [percent] of the nitrogen load to the land surface." *Id.* at 7153.[1] Similarly, in Whatcom County, 29 percent of the tested wells did not satisfy the drinking water standard. The study attributed the nitrate contamination in large part to agricultural activities, "with manure contributing the largest portion of nitrogen to the land surface." *Id.* at 7154.

[1] Soundkeeper states that the EPA concluded that "livestock, primarily dairy cattle, account for 65 percent of nitrate contamination in groundwater." Br. of Soundkeeper at 4. However, Soundkeeper's construction is imprecise because those percentages "are based on the amount of nitrogen generated by the activity and the potential loading to the *ground*; they do not represent loadings to *groundwater*." AR at 7150 (emphasis added).

Excess nitrates in surface waterbodies are also problematic in that they can promote "eutrophication," which is a "slow, natural process where sediments build up in a waterbody like a lake." *Id.* at 7037. A surplus of nitrate in a given waterbody can lead to excessive algae or plant growth that reduces dissolved oxygen and results in "stress or death to aquatic organisms, including fish." *Id.* at 7035. Over time, the sediments that build up in the waterbody during eutrophication can fill it in entirely, changing the waterbody to a wetland and eventually to dry ground.

Excess phosphorous in soil is problematic due to the potential detrimental impact to surface water. Like nitrate, an overabundance of phosphorous in a waterbody also contributes to eutrophication. In addition, when enough phosphorous is present, cyanobacteria, a type of algae, can out-compete other algae and cause blooms that produce liver, nerve, or skin toxins. These toxins are a significant public health threat that can cause sickness in both humans and animals.

Fecal coliform, a type of bacterial pollutant found in animal waste, is another type of contaminant found in manure that is of particular concern at a CAFO. Following a precipitation event, fecal coliform is picked up by storm run-off and transported to "water conveyances," such as stormwater drains, and deposited in "lakes, rivers[,] or marine waters." *Id.* at 7037. Where fecal coliform is present in large quantities, other pathogens from animals, some of which are harmful to humans when consumed, are likely to be present as well. Consequently, when large amounts of fecal coliform are detected in shellfish, shellfish beds must close, causing "significant economic damage to shellfish growers." *Id.* at 7038.

II. LEGAL BACKGROUND

Congress passed the federal Clean Water Act (CWA) with the intent to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). To that end, pursuant to the CWA, any discharge of pollutants from a "point source" into navigable water is prohibited unless the discharge occurs in accord with an NPDES permit. 33 U.S.C. §§ 1311(a), 1362 (2014). CAFOs are considered "point sources" and are therefore subject to regulation under the CWA and must comply with NPDES permitting requirements if they discharge pollutants to state waters. 40 C.F.R. § 122.23(a); *Waterkeeper Alliance, Inc. v. United States Envtl. Prot. Agency*, 399 F.3d 486, 504–05 (2nd Cir.2005). Ecology is responsible for administering the NPDES permit program in Washington. 33 U.S.C. § 1342(b) (2014); RCW 90.48.260(1).

In addition to implementing the CWA, Ecology is also responsible for administering a state discharge permit program under the Water Pollution Control Act (WPCA), ch. 90.48 RCW. RCW 90.48.260(1). Like its federal counterpart, the WPCA requires any industrial or commercial operation that discharges solid or liquid waste material into state waters to obtain a permit from Ecology. RCW 90.48.160. Any state standard or limitation in the WPCA must be at least as stringent as the corresponding federal limitation or standard. 33 U.S.C. § 1370.

III. DISCHARGE PERMITS

Pursuant to its authority under the CWA and the WPCA, Ecology issued two general permits for CAFOs in January 2017 following an extensive public comment period. Soundkeeper, together with several additional conservation organizations, submitted public comment on the proposed permits.

A general permit, unlike an individual permit issued for a single point source or to a single facility, is one that applies to multiple facilities that conduct the same kind of discharge activities from the same type of point source. WAC 173-226-030(13)-(14). Prior to issuing the permits, Ecology published a literature review that provided the scientific basis for the conditions contained within the permits.

The State Waste General Discharge Permit (state only permit) regulates discharge to groundwater and prohibits any discharge to surface water in accord with the state WPCA. The combined NPDES and State Waste General Discharge Permit (combined permit) regulates discharges to surface and groundwater pursuant to the federal CWA and under the state WPCA. Emergency application of manure to crop fields during winter, and the use of tile drains that lower the water table[2] to make fields more farmable, are allowed under both permits and have a potential to discharge to surface water. While allowing these practices to take place on CAFOs, both permits provide that CAFOs may not discharge pollutants in quantities that violate water quality standards.

In addition, both permits impose conditions authorizing some discharge to groundwater from manure storage lagoons, land application fields[3], composting areas, and animal pens and corrals, so long as the facility is otherwise in full compliance with the permit. With regard to land application fields, after initially including a vague "spring green up" condition, AR at 3834, both

[2] The water table is "[t]he level at, and below, which the ground is completely saturated with water." AR at 3724.

[3] A land application field or area is any land used by the CAFO operator, to which manure, litter, or process wastewater is applied. Land application, in turn, refers to the process of applying manure and other byproducts to a land application field or area.

permits were amended to employ T-SUM 200[4] as the standard timing guideline for spring manure application in response to comments from the Dairy Federation.

For manure storage lagoons, the permits require new lagoons to limit permeability, meaning "how quickly and easily liquid will move" through the liners to the soil below. *Id.* at 3878. Under the permits, lagoons must have a permeability of $1x10^{-6}$cm/s, which when compacted over time will seal further reducing the permeability to $1x10^{-7}$ cm/sec, consistent with National Resource Conservation Service (NRCS) recommendations. The NRCS is an agency that operates within the United States Department of Agriculture and provides technical assistance to farmers. The NRCS also develops and promulgates industry practice standards.

For existing manure storage lagoons, Ecology adopted the NRCS technical note 23, in condition S7.B in both permits. Technical Note 23 provides an assessment tool to determine the condition of a given lagoon. CAFOs must submit a completed assessment for each lagoon within 2 years of permit coverage, and if a lagoon is identified as falling within a particular risk category, the CAFO has 6 months to develop a plan to address deficiencies and 18 months to implement it. If a lagoon is within 2 feet of groundwater, the CAFO is required to conduct groundwater monitoring.

In creating the combined permits, Ecology established a new application process for CAFOs. Previously, applicants seeking discharge permits were required to submit a proposed nutrient management plan which was then reviewed by Ecology prior to acceptance and permit

[4] T-SUM 200 refers to the point at which the "sum of the daily heat units above zero for each day since January 1" reaches 200. AR at 6960. "Heat units are the average of each day's low and high temperatures in degrees Celsius." *Id.* Once this point is reached, land application of manure can begin. Because of variations in temperature throughout the state, T-SUM 200 will be reached at different times at different facilities depending on a facilities' location.

coverage. The site-specific conditions in the nutrient management plans became part of the permit's conditions once the permit was issued. The review process involved substantial "back-and-forth" that sometimes took years to complete, during which time the CAFO was not subject to any enforceable conditions. *Id.* at 3822. To avoid this inefficiency, when Ecology implemented the present permitting scheme, it incorporated the minimum nutrient plan requirements into the general permits and included these requirements as baseline conditions.

As of May 21, 2018, 23 CAFO facilities were permitted. Included among these 23 facilities were several CAFO operations that had previously received permits in 2006, which were extended and reissued in 2017. The 2006 permits covered 10 facilities. The permits at issue in this case became effective in March 2017 and will expire in March 2022.

IV. ADMINISTRATIVE APPEAL

Both Soundkeeper and the Dairy Federation appealed the combined and state only permits before the PCHB, alleging multiple deficiencies. Soundkeeper broadly argued that both permits authorized unlawful discharges to surface and groundwater and that the conditions failed to protect water quality standards. The Dairy Federation challenged the sampling and other operational requirements in the permits, including the permits' use of the T-SUM 200 standard, as "unlawful, unjust, unreasonable, impracticable, and economically infeasible." *Id.* at 123.

The PCHB consolidated the parties' appeals and listed 19 issues for hearing. Following Ecology's largely successful motion for partial summary judgment addressing 8 of the 19 issues, the PCHB dismissed 7 issues, including Soundkeeper's contention that Ecology failed to fulfill its legal obligation to consider the effects of climate change in drafting the permits, and 12 issues remained before the Board. After an 8-day hearing, the PCHB entered findings and conclusions

affirming the permits as written with the exception of two conditions related to measuring manure storage lagoons that the PCHB remanded for rewriting in favor of the Dairy Federation.

Soundkeeper petitioned for review of the PCHB's order on partial summary judgment and of the findings of fact, conclusions of law, and order entered following the administrative hearing in Thurston County Superior Court. The Dairy Federation also petitioned for review of the PCHB's findings of fact, conclusions of law, and order in Thurston County Superior Court. The PCHB granted certificates of appealability in both cases. Ecology petitioned this court for direct review of both cases under RCW 34.05.518. Our commissioner granted the petition and consolidated the cases for review.

DISCUSSION

I. STANDARD OF REVIEW

An appeal from a PCHB order is governed by the Administrative Procedure Act (APA), ch. 34.05 RCW. RCW 34.05.510, .518; *Port of Seattle v. Pollution Control Hr'gs Bd.*, 151 Wn.2d 568, 587, 90 P.3d 659 (2004). We stand in same position as the superior court and directly apply APA standards to the PCHB's record. *Skagit County v. Skagit Hill Recycling, Inc.*, 162 Wn. App. 308, 317-18, 253 P.3d 1135 (2011). Accordingly, we must confine our review to the record before the PCHB. RCW 34.05.558; *Port of Seattle*, 151 Wn.2d at 587. The party challenging an agency action bears the burden of establishing its invalidity. RCW 34.05.570(1)(a).

We may reverse the PCHB's order "'where the agency has erroneously interpreted or applied the law, the agency's order is not supported by substantial evidence, or the agency's decision is arbitrary and capricious.'" *Snohomish County v. Pollution Control Hr'gs Bd.*, 187 Wn.2d 346, 357, 386 P.3d 1064 (2016) (quoting *Postema v. Pollution Control Hr'gs Bd.*, 142

Wn.2d 68, 77, 11 P.3d 726 (2000)); *see also* RCW 34.05.570(3). Under the "'error of law'" standard, we may substitute our view of the law for the agency's. *Verizon Nw., Inc. v. Emp't Sec. Dep't*, 164 Wn.2d 909, 915, 194 P.3d 255 (2008) (citing RCW 34.05.570(3)(d)). However, "we accord an agency's interpretation of the law great weight where the statute is ambiguous and is within the agency's special expertise." *Snohomish County*, 187 Wn.2d at 357. In addition, we defer to the agency's decision on factual matters when the factual matters pertain to complex, technical issues specifically within the agency's expertise. *Puget Sound Harvesters Ass'n v. Dep't of Fish & Wildlife*, 182 Wn. App. 857, 867, 332 P.3d 1046 (2014).

An agency's order is supported by substantial evidence where the evidence is sufficient "'to persuade a fair-minded person of the truth or correctness of the order.'" *Port of Seattle*, 151 Wn.2d at 588 (internal quotation marks omitted) (quoting *King County v. Cent. Puget Sound Growth Mgmt. Hr'gs Bd.*, 142 Wn.2d 543, 553, 14 P.3d 133 (2000)). We will not overturn the PCHB's decision unless it is "clearly erroneous", and we are "'definitely and firmly convinced that a mistake has been made.'" *Id.* (quoting *Buechel v. Dep't of Ecology*, 125 Wn.2d 196, 202, 884 P.2d 910 (1994)).

An arbitrary or capricious action is one that is "'willful and unreasoning and taken without regard to the attending facts or circumstances.'" *Id.* at 589 (internal quotation marks omitted) (quoting *Wash. Indep. Tel. Ass'n v. Wash. Utils. Transp. Comm'n*, 149 Wn.2d 17, 26, 65 P.3d 319 (2003)). So long as the PCHB "acted honestly and upon due consideration," its decision was not arbitrary or capricious even if we would have decided the issue differently. *Id.*

II. TECHNOLOGY BASED "AKART" REQUIREMENTS

A. LEGAL PRINCIPLES

When issuing a general waste discharge permit, Ecology must ensure that the permit conditions "apply and insure compliance" with "[t]echnology-based treatment requirements" that reflect "all known, available, and reasonable methods of prevention, treatment, and control," or "AKART," required under the WPCA, the Pollution Disclosure Act of 1971, ch. 90.52 RCW, and the Water Resources Act of 1971, ch. 90.54 RCW. WAC 173-226-070(1). AKART involves use of "the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge." WAC 173-201A-020.[5] The Water Resources Act specifies that for "all wastes and other materials and substances proposed for entry" into waters of the state, AKART must be applied "prior to entry." RCW 90.54.020(3)(b).

AKART may be implemented through the use of effluent limitations or best management practices. WAC 173-226-070(1)(a), -070(1)(d). The phrase "[e]ffluent limitation" refers broadly to "any restriction established by the department or the administrator on quantities, rates, and concentrations of [discharges] from point sources into waters of the state." WAC 173-226-030(10); *see also* 33 USC § 1362(11) (defining effluent limitation under the CWA). Best management practices are "schedules of activities, prohibitions of practices, maintenance procedures, and other management practices" that are designed to "prevent or reduce the pollution of the waters of the state." WAC 173-226-030(3).

[5] WAC 173-201A-020 was amended in 2019 but this amendment has no impact on our analysis, so we cite to the current version.

The term "reasonable" in AKART limits Ecology's discretion by requiring it to impose conditions that are "both economically and technically feasible." *See Puget Soundkeeper All. v. Dep't of Ecology*, 102 Wn. App. 783, 792-93, 9 P.3d 892 (2000) (describing the term "reasonable" as used with regard to "all known, available, and reasonable methods of emission control" under the Clean Air Act in former RCW 70.94.152(1) (1991), which Ecology also administers, and holding that the AKART requirements in the WPCA context must be similarly construed). While this language is intended to promote the use of new technology, it does not necessarily compel use of the best technology. *Id.* at 792-93 (applying the analysis in *Weyerhauser Co. v. Southwest Air Pollution Control Auth*ority, 91 Wn.2d 77, 81, 586 P.2d 1163 (1978) pertaining to the Clean Air Act to the WPCA).

B. ANALYSIS

1. MANURE STORAGE LAGOONS

The PCHB found that the permits did not contain a specific AKART requirement for existing manure storage lagoons because Ecology did not have sufficient information regarding their current state. The PCHB also found that "the lagoon assessment required by Condition S7.B will provide information on the range of impacts from existing lagoons and assist Ecology in future permit development." AR 3423. Notably, the PCHB did not equate condition S7.B to an AKART requirement.

The PCHB's finding is consistent with testimony from Ecology's expert witness, Melanie Redding, who authored the literature review on which the permits are based. Redding explained that because the prior permits did not cover many facilities, Ecology did not have enough information about the condition of most lagoons in the state to impose an AKART requirement in

the general permits. Redding clarified that Ecology's intent for these permits was to instead "get a handle on how [these lagoons are] constructed, and then also to try and prioritize . . . which ones are the worst ones," in order to "work with them to try and make improvements" in the future. *Id.* at 4301.

Because manure lagoons are known to leak and contaminate groundwater, Soundkeeper argues that existing lagoons must be subject to AKART requirements before a discharge enters state waters. Soundkeeper asserts that despite acknowledging that there was no specific AKART requirement for existing manure lagoons, the PCHB approved the permit conditions in contravention of the law. Moreover, Soundkeeper claims that condition S7.B is not an AKART requirement because it is not technology-based, the inspection component is impracticable for farmers, and it allows CAFOs with existing lagoons to discharge into groundwater for 3.5 years before mandating any preventative action. Lastly, Soundkeeper presents the possibility of incorporating double-synthetic lagoon liners as a known and available technology that would adequately protect groundwater and satisfy the AKART standard.

Despite stating that there was no AKART requirement for existing manure lagoons during the hearing before the PCHB, Ecology now claims that S7.B, the information gathering condition, is the AKART requirement applicable to existing lagoons. Ecology argues that S7.B is AKART because it requires all facilities to assess their lagoons and, if a lagoon falls into the "high risk" category, the CAFO must develop and implement a plan to address the issues. Br. of Ecology at 14. Moreover, Ecology states that under this same condition, if a lagoon is within two feet of groundwater, the CAFO must conduct groundwater monitoring and develop and implement a plan to increase the distance between the lagoon and the groundwater.

Ecology takes issue with Soundkeeper's assertion that any seepage from a manure lagoon will necessarily contaminate groundwater in violation of water quality standards, explaining that whether seepage will reach groundwater depends on a number of factors particular to each lagoon. For this reason, Ecology determined that the lagoon assessment tool required by the permits is the most reasonable mechanism for addressing any potential deficiencies. Lastly, Ecology denies that double-synthetic liners are necessary for lagoons and maintains that the cost of installation is prohibitively expensive, rendering them unreasonable and inconsistent with AKART.

Like Ecology, the Dairy Federation maintains that Soundkeeper overstates the impact of manure lagoon leakage on groundwater contamination. The Dairy Federation argues that not all seepage leads to groundwater contamination because seepage is minimal, the liner must be saturated for the seepage to reach the soil below, and from there, the seepage must pass through the vadose zone[6] to reach groundwater, which is adequately protected if there is sufficient distance between the lagoon liner and the water table. Consequently, the Dairy Federation argues that the permit conditions, modeled in accord with the NRCS recommendations, are AKART. The Dairy Federation further claims that condition S7.B satisfies the AKART standard because it is necessary for Ecology to know the condition of existing lagoons so that Ecology may impose requirements based on the lagoons' particular needs.

We agree with Soundkeeper that the PCHB erred when it approved the permits while simultaneously finding that they did not contain an AKART requirement applicable to existing manure lagoons. Under RCW 90.52.040, "all wastes and other materials and substances proposed

[6] The "vadose zone" refers to the "part of the subsurface that basically goes from ground surface down to what is usually defined as the regional water table." AR at 4739.

for entry into [waters of the state] shall be provided with [AKART] prior to entry." The same requirement is set forth in RCW 90.54.020(3)(b). Both RCW 90.52.040 and 90.54.020 are incorporated into WAC 173-226-070(1), which provides that general state waste discharge permits issued by Ecology "shall" comply with AKART as required under these statutes. These statutes, therefore, apply to both the state permit and the combined permit.

Although not all lagoons contaminate groundwater, the PCHB finding and evidence in the record reflect that groundwater contamination from lagoon seepage has been documented at CAFOs. For example, the PCHB found that seepage from manure lagoons is "[o]ne source of nitrate in groundwater." AR at 3416. In addition, Redding testified that during her review of various studies regarding manure lagoons, all but one study showed that manure lagoons impact groundwater. Redding agreed that the studies have consistently shown that manure lagoons leak and that seepage from lagoons "[p]rimarily" goes to groundwater. *Id.* at 4146.

The PCHB concluded that the permits include all necessary AKART requirements and effluent limitations, notwithstanding its finding that there was no AKART requirement specifically applicable to existing manure lagoons. However, the PCHB identified the particular conditions that applied AKART or effluent limitations to composting areas, land application fields, animal pens and corrals, and *new* lagoons. Omission of existing lagoons from this list shows that the PCHB determined that an AKART requirement was not necessary, although it recognized that manure lagoons can contaminate groundwater. The PCHB ruling is thus contrary to RCW 90.54.020(3)(b), RCW 90.52.040, and WAC 173-226-070(1).

Ecology denied that there was an AKART requirement for existing manure lagoons during the hearing before the PCHB, but both Ecology and the Dairy Federation now claim that condition

S7.B satisfies AKART requirements for existing lagoons. We disagree because condition S7.B allows CAFOs to operate high risk lagoons for up to 3.5 years after the permits have been issued without requiring CAFOs to engage in a single action to prevent or abate the seepage of pollutants.

Ecology incorporated NRCS technical note 23 into condition S7.B as the guideline for evaluating the condition of existing lagoons. Technical note 23 outlines a procedure to "establish an overall assessment category of a [manure storage lagoon] according to observed factors that may contribute to the risk of water resource degradation." AR at 7519.

Under condition S7.B, if after assessment, a given lagoon falls within a risk category of 3A, 3B, 3C, or 4, the CAFO has 6 months to develop a plan to bring the lagoon down to risk category 1 and 18 months to begin to implement that plan. According to the NRCS guidelines, lagoons that are in risk category 4 have both a high site risk and a high structure risk, lagoons in category 3C have a high site risk but a medium structure risk, lagoons in category 3B have a medium site risk but a high structure risk, and lagoons in category 3A have a low site risk but a high structure risk.

A high structure risk means the lagoon "does not comply with the NRCS practice standard[7] in use at the time when constructed," and "[m]ajor corrective actions are necessary." *Id.* at 7522. A high site risk means the lagoon is "[l]ocated in an area where water resources are highly vulnerable to contamination and the site cannot be easily modified to protect water resources." *Id.* For lagoons in risk category 4, 3B, and 3A, the NCRS recommends discontinued use and major repairs or possible replacement of the structure. For category 3C lagoons, the NRCS

[7] NRCS practice standards represent the "'industry standards' for practices planned, designed[,] and installed on agricultural land." *Id.* at 5484-85.

recommends discontinued use for minor repairs and possible relocation of the structure. The NRCS also recommends discontinued use and repair for lower risk lagoons that fall into category 2C and 2B, but condition S7.B does not require any action by CAFOs to address deficiencies for structures within those categories.

Condition S7.B, contradicts the recommendations within the NRCS technical note on which it is based. Soundkeeper is correct in that condition S7.B does not require CAFOs to undertake any action to repair lagoons falling within risk categories 2B and 2C, for which NRCS recommends discontinued use and minor repairs. Ecology explained that it elected not to require any action for lagoons in categories 2B and 2C because the NRCS guiding document classified those structures as having minor deficiencies, and Ecology elected to "focus on the major ones instead." *Id.* at 4040.

Despite Ecology's intent to focus on the highest risk lagoons, the permits allow such lagoons to continue to operate and potentially discharge contaminants into groundwater indefinitely, providing only that CAFOs must begin implementing remedial measures 18 months after assessment with no completion deadline. These permit conditions stand in contrast to the NRCS recommendation that CAFOs discontinue use of high risk manure storage lagoons *until* major repairs are completed. Moreover, the conditions are inconsistent with the policy objective that sources of contaminants use AKART prior to entry in state waters. RCW 90.54.020(3)(b); RCW 90.52.040; WAC 173-226-070(1).

Given the disparity between the NRCS recommendation and the permit requirements, condition S7.B does not implement "the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge." WAC 173-

201A-020. Therefore, condition S7.B is not an AKART requirement, and the PCHB's decision is not supported by substantial evidence and is contrary to law. *See* RCW 90.54.020(3)(b); RCW 90.52.040; WAC 173-226-070(1).

We, however, disagree with Soundkeeper that double-synthetic liners with leak protection represent the AKART standard for existing manure lagoons. First, Soundkeeper does not argue that the conditions for newly constructed lagoons, which do not require synthetic liners but include a permeability standard in accord with NRCS guidelines, are not AKART. Ostensibly, if double-synthetic liners with leak protection represent the AKART standard for existing lagoons, they should be required for new lagoons as well. Second, the record reflects that the cost of the liners plus the cost of installation, which can total approximately $600,000 for a four and a half acre lagoon, is prohibitively expensive for CAFO operators. Double-synthetic liners with leak protection do not qualify as AKART because they are not economically feasible for most CAFOs. *See Puget Soundkeeper All.*, 102 Wn. App. at 793.

2. COMPOSTING AREAS AND ANIMAL PENS AND CORRALS

The PCHB concluded that the permits contain conditions that implement AKART and establish technology-based effluent limits for composting areas and animal pens and corrals. In particular, the PCHB determined that for composting areas, conditions S4.A, S4.B, and S4.C, and S4.D satisfy AKART requirements, and conditions S4.A and S4.D constitute technology-based effluent limitations. For animal pens and corrals, the PCHB concluded that conditions S4.A, S4.D, and S4.E implement AKART requirements and conditions S4.A, S4.B, S4.C, S4.D, S4.E and S4.F implement technology-based effluent limitations.

Condition S4.A, S4.B, and S4.C are intended to protect surface and groundwater from discharges emitted via runoff from composting areas, animal pens and corrals, and other production areas.[8] Condition S4.B applies specifically to composting areas and other places where solid manure, litter, and feed are stored and provides that any runoff from those areas must be collected and stored in manure storage lagoons. Condition S4.C compels CAFO operators to maintain infrastructure in a condition that prevents discharges arising from "physical failure of the infrastructure." AR at 6983.

In addition, condition S4.D requires CAFO operators that elect to divert clean water away from the facility, rather than store it onsite, to ensure that the clean water does not come into contact with manure, litter, wastewater, or other byproducts. Condition S4.E provides that livestock may not come into contact with surface water, permitting a narrow exception for contact with surface water in production areas so long as the surface water does not drain into or act as a conduit to other surface water. Condition S4.F requires proper disposal of chemicals.

Soundkeeper argues that the permits do not contain AKART conditions as needed to prevent discharge from animal pens and corrals and compost areas. Soundkeeper contends that the PCHB erred because the conditions it determined satisfied AKART were mere general requirements, they did not constitute technology-based effluent limitations or otherwise implement any technologies.

[8] A "[p]roduction [a]rea" as defined under the permits, refers to locations in a CAFO facility "that are used for animal confinement, manure, litter, feed, process wastewater, and other organic by-product storage, product processing facilities (e.g. milking parlor, egg washing, feed mixing), and other areas used for the storage, handling, treatment, processing, or movement of raw materials, products, or wastes. This includes manure stockpiled on fields." AR at 6959, 7013.

Ecology responds that due to the compaction of manure in animal pens and corrals and the lack of a "hydraulic head"[9] to move contaminants through the impermeable barrier, the permit conditions designed to prevent runoff satisfy AKART for those production areas. Response Br. of Ecology at 19. For composting areas, Ecology maintains that the permit conditions reflect the best available practices for mitigating the risk of contamination. The Dairy Federation, for its part, argues that these composting areas and pens and corrals do not contaminate ground or surface water to the extent suggested by Soundkeeper, and the permit conditions provide reasonable methods for containing pollutants.

While the permit conditions pertaining to animal pens and corrals satisfy AKART, the conditions pertaining to composting areas do not meet this standard.

a. Animal Pens and Corrals

The permit conditions pertaining to pens and corrals satisfy AKART because they constitute "best management practices," which is one method of implementing AKART into general waste discharge permits. WAC 173-226-070(1)(d). Best management practices may involve practices designed to prevent or reduce pollution of state water such as "treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage." WAC 173-226-030(3). Permit conditions S4.A and S4.D require CAFOs to contain runoff from production areas including animal pens and corrals and constitute a best management practice. WAC 173-226-030(3).

[9] The hydraulic head refers to the "total pressure exerted by a water mass at any given point." AR at 7849. In lagoons, the hydraulic head is the pressure from the nine feet of liquid manure that drives fluid through the liner into the soil.

Moreover, condition S4.C is an additional practice designed to control discharges by ensuring that CAFO operators maintain all infrastructure in good repair.

To the extent that Soundkeeper's contention regarding the adequacy of these conditions is predicated on its disagreement with the underlying science on which Ecology based its drafting decisions, we defer to Ecology. "'[S]ubstantial judicial deference to agency views [is] appropriate when an agency determination is based heavily on factual matters, especially factual matters which are complex, technical, and close to the heart of the agency's expertise.'" *Puget Sound Harvesters Ass'n*, 182 Wn. App. at 867 (quoting *Hillis v. Dep't of Ecology*, 131 Wn.2d 373, 396, 932 P.2d 139 (1997)).

Here, although Ecology agreed that animal pens and corrals are a potential source of contamination, Ecology explained that contaminants from these areas are unlikely to seep into groundwater from surface loading because of a thick, organic barrier created by compacted manure. This "restrictive zone [ ] does not promote infiltration or leaching." AR at 7159. One study determined that the permeability rate below pens and corrals is $1x10^{-9}$, which is less permeable than the rate NRCS considers to be the industry standard for manure storage lagoons liners. Unlike in manure lagoons where constant pressure from the hydraulic head drives liquid through the liner into the soil below, there is no hydraulic head pushing against the natural barrier in a pen or corral.

Due to the low permeability of the organic barrier and the lack of a hydraulic head, soil samples collected under pens showed elevated nitrate in the uppermost part of the soil but "it quickly dropped off to background concentrations." *Id.* at 4107. Soundkeeper disputes this fact, asserting instead that nitrate contamination exists "throughout the soil column" below pens and

corrals. Reply Br. of Soundkeeper at 17. Insofar as our determination regarding whether the permit condition satisfy AKART depends on resolution of this disputed fact, we must defer to Ecology. *See Puget Sound Harvesters Ass'n*, 182 Wn. App. at 867. Accordingly, the best management practices in the permit pertaining to runoff containment and infrastructure management satisfy AKART as applied to pens and corrals.

b. Composting Areas

The PCHB's conclusion that the permit conditions pertaining to composting areas satisfy AKART is not supported by substantial evidence. *See Port of Seattle*, 151 Wn.2d at 588. On this record, a fair minded person would not be persuaded that the permit conditions involve "the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge." WAC 173-201A-020; *See Port of Seattle*, 151 Wn.2d at 588. Instead, the record reflects that the permit conditions were not informed by a full investigation of groundwater impacts or of methods available to contain pollutants.

During the public comment period for preliminary drafts of the permits, Soundkeeper, along with other conservation groups, alerted Ecology to a study in which the Washington State Department of Agriculture (WSDA) evaluated 24 compost operations in the lower Yakima Valley. According to the public comment, composting was primarily conducted on bare ground and the WSDA "estimated that 155 tons of nitrate leached to groundwater per year from each of the 24 compost operations." AR at 6361. The conservation groups recommended the use of liners or concrete pads for composting areas to prevent nitrate seepage into soil.

When asked whether Ecology had considered these comments in drafting the permit conditions, Jonathan Jennings, the lead permit writer, stated that he did not recall seeing the

comments or discussing the possibility of requiring CAFOs to conduct composting activities on liners. Jennings confirmed that he had no reason to question the results of the WSDA study.

In addition, Redding testified that she "was not asked to address compost." *Id.* at 4108. The literature review that Redding authored, therefore, does not discuss composting except to acknowledge that composting by storing dry manure solids occurs on CAFOs. Both Jennings and Redding agreed that composting can cause groundwater contamination.

When asked why the permits did not include a groundwater monitoring requirement for composting areas, Jennings testified that when he toured facilities while developing the permits, he observed that composting was primarily taking place in dry climates where there is less precipitation to drive nutrients from dry manure into soil. The permits, however, do not restrict composting to locations with low precipitation rates or otherwise require CAFO operators to install roofs to protect compost sites from precipitation.

Jennings further explained that heavy machinery compacts the soil beneath compost piles, reducing permeability and diminishing seepage. However, beyond Jennings' testimony regarding his observations of several Eastern Washington facilities, Ecology did not present any data regarding the permeability rates of compacted soil or whether soil compaction is successful in preventing nitrates from seeping into groundwater. The permits also do not contain a condition mandating soil compaction below composting area.

Moreover, Soundkeeper's expert witness testified that in the spring, when the soil is wet, compaction is destroyed. For this reason, soil compaction is not a complete solution to nitrate discharge from compost areas but rather "a step that needs to be taken further." *Id.* at 4574.

Ecology defends the PCHB decision on the basis that the permit conditions satisfy AKART because Soundkeeper failed to identify any effective alternative methods for preventing contamination beyond those already contained in the permit. Ecology mischaracterizes the record on this point.

In addition to advocating for the use of drains to collect liquid runoff for proper storage, which is captured in condition SB.4 of the permits, Soundkeeper identified a number of other methods to reduce contamination from composting areas. For example, Soundkeeper recommended that CAFOs use concrete slab surfaces or liners rather than bare ground for composting areas in the public comment it submitted on preliminary permit drafts. Soundkeeper provided the same recommendation in David J. Erickson's expert report that Soundkeeper submitted to the PCHB and in Erickson's testimony as an expert witness during the hearing before the PCHB.

As several additional protective measures, Erickson suggested that CAFOs reduce permeability of soil below composting areas through soil compaction, that CAFOs select locations on sloped surfaces to allow liquids to runoff more quickly into storm drains, and that CAFOs install roofs over composting areas. Although these measures will not eliminate contamination entirely, they can reduce contamination.

The PCHB's determination that the permit conditions satisfy AKART requirements is not supported by substantial evidence. Ecology's omission of composting areas from its literature review without explanation, its failure to provide evidentiary support for its drafting decisions beyond Jennings' personal observations, and the availability of additional methods of containing pollutants that Ecology did not consider, would lead a fair-minded person to question whether the

permits contain "the most current methodology that can be reasonably required." WAC 173-201A-020. In light of the deficiencies underlying Ecology's drafting procedure as to composting areas, the PCHB's approval of the permit conditions for this issue was "clearly erroneous." *See Port of Seattle*, 151 Wn.2d at 588.

III. EFFLUENT LIMITATIONS AND WATER QUALITY STANDARDS

A. LEGAL PRINCIPLES

1. EFFLUENT LIMITATIONS

State agencies authorized to issue NPDES permits must craft permit conditions that protect water quality standards established by both state and federal statutes and regulations. *Puget Soundkeeper All. v. Dep't of Ecology*, 191 Wn.2d 631, 636, 424 P.3d 1173 (2018); 33 U.S.C. §§ 1311(b)(1)(C), 1342(a)-(b); 40 C.F.R. § 122.4(a), (d); WAC 173-226-070. Entities operating under NPDES permits are permitted to discharge pollutants as long as they do so within the scope of the permit conditions. *Defenders of Wildlife v. Browner*, 191 F.3d 1159, 1163, *amended on denial of reh'g*, 197 F.3d 1035 (9th Cir.1999). NPDES permits are therefore required to, "at the very least," set forth "'effluent limitations,' —that is, certain 'restriction[s] . . . on [the] quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged . . . into navigable waters.'" *Our Children's Earth Found. v. U.S. Envtl. Prot. Agency* 527 F.3d 842, 848 (9th Cir. 2008) (quoting *Waterkeeper All., Inc. v. U.S. Envtl. Prot. Agency*, 399 F.3d 486, 491 (2d Cir. 2005)).

Effluent limitations are technology-based because they are "determined according to the best available or practicable technology." *Id.* Although the technology-based effluent limits "take[] into account issues of practicability," NPDES permits must also ensure compliance with applicable

water quality standards regardless of practicability. *Defenders of Wildlife*, 191 F.3d at 1163. Consequently, "where effluent limitations prove insufficient to attain or maintain certain water quality standards, the [CWA] requires NPDES permits to include additional water quality based effluent limitations." *Waterkeeper Alliance*, 399 F.3d at 492 (citing 33 U.S.C. §§ 1311(b)(1), 1312(a)).

A permit writer must conduct a "reasonable potential" analysis to evaluate whether a facility's discharge will cause, has the reasonable potential to cause, or will contribute to a violation of water quality standards. 40 C.F.R. 122.44(d)(1)(ii), (iv). If, based on this analysis, the permit writer determines that there is a reasonable potential that a discharge will contain the pollutant in excess of water quality standards, the NPDES permit must include an effluent limitation for that pollutant. 40 C.F.R. § 122.44(d)(1)(iii).

> Water quality based effluent limitations, specifically, are required to:
>
> > control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the [permitting authority] determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.

40 C.F.R. § 122.4(d)(1)(i). Although ordinarily, an effluent limitation consists of a requirement to abide by a specific numeric criterion for a given pollutant, effluent limitations may also be established by "best management practices" where imposing a numeric criterion is infeasible. 40 C.F.R. § 122.44(k)(3).

As in the federal NPDES permitting program, the Washington legislature has similarly proscribed Ecology from issuing any state permit that would allow a permittee to discharge in violation of state water quality standards. RCW 90.48.520; *see also Puget Soundkeeper All. v.*

Pollution Control Hr'gs Bd., 189 Wn. App 127, 138, 356 P.3d 753 (2015). In addition to technology-based AKART requirements, which may be implemented through effluent limitations or best management practices, general permits issued by Ecology must also incorporate water quality based effluent limitations where necessary to satisfy groundwater and surface water standards. WAC 173-226-070 (1)-(3). Ecology is required to issue a fact sheet that includes an explanation of how the permits meet groundwater and surface water quality standards. WAC 173-226-110(1)(j)(ii).

2. WATER QUALITY STANDARDS

As allowed under 33 U.S.C. § 1313, Washington has elected to create its own water quality standards. *Port of Seattle*, 151 Wn.2d at 590. Washington-specific water quality standards consist of "narrative criteria[10] protecting the beneficial uses of state waters, numeric criteria for conventional pollutants and substances; and an antidegradation policy." *Id.* (citations omitted).

The antidegradation policy states,

> Waters of the state shall be of high quality. Regardless of the quality of the waters of the state, all wastes and other materials and substances proposed for entry into said waters shall be provided with all known, available, and reasonable methods of treatment prior to entry. Notwithstanding that standards of quality established for the waters of the state would not be violated, wastes and other materials and substances shall not be allowed to enter such waters which will reduce the existing quality thereof, except in those situations where it is clear that overriding considerations of the public interest will be served.

RCW 90.54.020(3)(b).

[10] The term, "narrative criteria" refers to general statement that applies broadly to multiple pollutant types, as in "no toxics in toxic amounts." *American Paper Inst., Inc. v. U.S. Envtl. Prot. Agency,* 996 F.2d 346, 348 (D.C. Cir. 1993).

Ecology has promulgated regulations particular to surface water quality, ch. 173–201A WAC, and to groundwater quality, ch. 173–200 WAC. With regard to surface water, Ecology has established protections based on numeric and narrative criteria, antidegradation, and designated uses. WAC 173-201A-010(1)(a). Numeric and narrative criteria are assigned based on a body of water's designated uses. WAC 173-201A-010(1)(b). In broader terms, the narrative criteria standard pertaining to surface water under WAC 173-201A-260(2) provides:

> (a)Toxic, radioactive, or deleterious material concentrations must be below those which have the potential, either singularly or cumulatively, to adversely affect characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent upon those waters, or adversely affect public health (see WAC 173-201A-240, toxic substances, and 173-201A-250, radioactive substances).
>
> (b) Aesthetic values must not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste (see WAC 173-201A-230 for guidance on establishing lake nutrient standards to protect aesthetics).

The antidegradation policy particular to groundwater protects its "existing and future beneficial uses." WAC 173-200-030(2)(a). Consistent with this policy, Ecology has established numeric criteria that specify the maximum concentration of various contaminants. WAC 173-200-040(1). Most groundwater criteria will be set against the standard for drinking water unless the groundwater is designated as requiring a more stringent level of protection than would be afforded based on human health criteria. *Id.* The criteria for a given contaminant must not be exceeded unless the natural groundwater quality in a given location already exceeds the criteria, in which case the natural groundwater quality will represent the criteria in that location. WAC 173-200-050(3)(b).

The enforcement limit is a distinct type of numeric criteria applicable to groundwater contaminants. WAC 173-200-050. An enforcement limit is not necessarily equivalent to the

maximum concentration of a given contaminant, but it instead reflects the "value assigned to any contaminant for the purposes of regulating that contaminant to protect existing groundwater quality and to prevent groundwater pollution." WAC 173-200-050(1). In determining the enforcement limit for a contaminant, Ecology applies the AKART standard and considers antidegradation, the "[o]verall protection of human health and the environment," the natural qualities of the groundwater, and several other factors. WAC 173-200-050(3)(a).

B. ANALYSIS

The PCHB approved the permits with regard to water quality standards, finding that conditions S3 (providing that no discharges authorized under the permit may violate water quality standards), S4.6 (pertaining to livestock mortality management), S4.J (pertaining to field application requirements), and S4.K (requiring operators to adaptively manage nutrient application to fields), are water quality based effluent limitations. The PCHB concluded that the permits do not allow unauthorized discharges into waters of the state and determined that with respect to this issue, "it will defer to Ecology's expertise in administering water quality laws and its technical judgments in NPDES permit development." AR at 3548 (citing *Port of Seattle*, 151 Wn.2d at 593-94).

Soundkeeper argues that the PCHB erred in determining that both the state only and combined permits provide adequate effluent limitations to protect water quality standards. Soundkeeper contends that the permit conditions Ecology identified as water quality based effluent limitations instead constitute technology-based effluent limitations, which is a distinct permit requirement. Soundkeeper asserts that Ecology failed to explain how the permit conditions will meet applicable water quality standards.

With regard to surface water discharges, Soundkeeper argues that although the permits prohibit surface water discharge with a narrow exception for a significant storm event, a CAFO in compliance with the permits may still discharge to surface water with no effluent limitation constraining that conduct. With regard to groundwater, Soundkeeper contends that because the permits do not require CAFOs to establish background concentrations of contaminants, there is no way for a CAFO to ensure that its activities do not violate groundwater quality standards. Moreover, Soundkeeper disagrees that compliance with the permit terms equates to compliance with groundwater quality standards and identifies several ways in which a CAFO can comply with the permit terms but discharge into groundwater in unregulated and unmonitored quantities.

Ecology defends the PCHB's determination that the effluent limitations identified in the permit are sufficient to meet water quality standards because the permit conditions, as written, prohibit any discharges that would violate water quality standards. Ecology cites a number of permit conditions in addition to those relied on by the PCHB as measures that are designed to protect surface and groundwater quality. Ecology asserts that a CAFO operating in compliance with these permit conditions necessarily protects water standards. Characterizing Soundkeeper's argument as challenging the lack of numeric effluent limitations,[11] Ecology responds that imposing numeric effluent limitations within the scope of the waste discharge permits is infeasible and therefore unnecessary.[12]

[11] Ecology's characterization is incorrect. Soundkeeper addresses more broadly the lack of "specific" effluent limitations that would satisfy water quality standards. Br. of Soundkeeper at 29. Soundkeeper's contention applies both to the lack of discrete numeric limits and to the lack of sufficiently protective best management practices for activities conducted on CAFOs.

[12] The Dairy Federation did not weigh in on this issue.

With regard to surface water, the combined permit conditions provide sufficient water quality based effluent limitations in the form of best management practices, but the state only permit condition regarding field discharges is too vague to prevent water quality violations from land application fields. With regard to groundwater, the permits do not contain adequate water quality based effluent limitations because a CAFO operator can comply with the permit conditions while potentially damaging groundwater quality through discharges from existing manure storage lagoons, compost areas, and land application fields.

1. SURFACE WATER QUALITY

Emergency winter land application and tile drains present two possible sources of surface water discharge that are allowed under both permits. An emergency winter land application occurs when a CAFO operator must apply manure to a field outside of the requirements specified in the permits to avoid greater harm to public health or safety, such as to avoid a lagoon over-topping from being overfilled. Ecology's permit writer agreed that emergency winter land applications present a risk of surface water discharge.

A tile drain is "a perforated pipe . . . or series of pipes . . . below a field that's intended to lower the water table so that – a field is actually cropable, farmable." AR at 3816. Ecology's permit writer confirmed that tile drains are used at CAFOs, that they are covered by the permits, and that could they potentially be a source of discharge. In particular, tile drains "will discharge into surface waters or some other drainage ditch that's a conduit to a surface water." *Id.*

Having acknowledged that these activities may lead to discharges, Ecology was required to either include technology-based effluent limitations to protect surface water quality standards, or where technology-based standards are insufficient, to include additional water quality based

effluent limitations. *Waterkeeper Alliance,* 399 F.3d at 492 (citing 33 U.S.C. §§ 1311(b)(1), 1312(a)); WAC 173-226-070(1)-(3). Ecology maintains that although these activities have the potential to result in discharge, the state only permit protects surface water quality because it does not allow discharge to surface water *at all*. Similarly, Ecology asserts that the combined permit protects water quality because it is effectively a no discharge permit, allowing discharges to surface water only in a "significant [ ] storm event." Response Br. of Ecology at 24.

For emergency winter land application, both the combined and state only permits contain conditions that constitute the types of best management practices that, under 40 C.F.R. § 122.44(k)(3), comprise effluent limitations sufficient to protect water quality. For example, during emergency winter land application, CAFOs must not apply nutrients in excess of a particular fields' yearly budget, and they must conform to other land application requirements in the permits. CAFOs must also keep records and report the occurrence of an emergency winter land application to Ecology. Soundkeeper does not argue that these measures are inadequate to protect surface water quality from emergency winter land application discharges.

Ecology identified condition S4.M, the "field discharge management" condition, as the condition that prevents unauthorized discharge to surface water from tile drains in both permits. Condition S4.M in the combined permit prohibits application of manure, litter, process wastewater and other organic by-products closer than 100 feet "to any down-gradient surface waters, open tile line intake structures, sinkholes, agricultural or drinking water well heads, or other conduits to surface or groundwaters." AR at 6935. In lieu of the 100-foot setback buffer, the permit allows for a 35-foot wide vegetative buffer or berm installation.

The combined permit outlines specific practices that are designed to prevent surface water discharge from tile drains. Soundkeeper has not shown any evidence that the conditions are not sufficient "best management practices" under 40 C.F.R. § 122.44(k)(3) to qualify as adequately protective effluent limitations.

In contrast, the state only version of condition S4.M does not impose either a best management practice or a numeric criterion on tile drains, but the inclusion of such measures in the combined permit demonstrates that they are available and could have been imposed. The same condition in the state only permit provides in its entirety,

> The Permittee must implement technologies, infrastructure, and activities on their land application fields in order to prevent all discharges to surface water and conduits to surface water from the field.

AR at 6992.

While Washington regulations do not specifically state that effluent limitations must consist of either numeric criteria or best management practices, Washington standards cannot be less stringent than any corresponding federal limitation or standard. 33 U.S.C. § 1370. The issue with this vague condition is compounded by the fact that Ecology did not explain how the permit meets surface water quality standards (as well as groundwater standards) in the fact sheet as required under WAC 173-226-110(1)(j)(ii). In particular, tile drains are largely omitted from the fact sheet and Ecology has not provided an explanation of how the conditions pertaining to tile drains protect surface water.

The combined permit contains conditions that protect surface water quality for tile drains and for emergency winter land applications, and the state only permit contains conditions that protect surface water quality for emergency winter land applications. However, while the state

only permit allows CAFO operators to use tile drains, the broad condition that CAFOs must not discharge in violation of water quality standards is not an adequate effluent limitation where the permit could have imposed additional requirements. The PCHB therefore erred in approving the state only permit as sufficiently protective of surface water quality standards with respect to this particular practice.

2. GROUNDWATER

Both the combined permit and the state only permit allow CAFOs to discharge to groundwater in ways that risk violation of Washington's antidegradation polices set forth in RCW 90.54.020(3)(b). For example, manure storage lagoons and composting areas lack sufficient technology-based AKART protections to ensure that these production areas do not contribute to groundwater contamination. As an additional example, CAFOs are permitted to land apply nutrients to fields tested as presenting a "very high" risk to groundwater for up to three consecutive years before the CAFO is required to cease land application on those fields. AR at 3902.

Ecology's experts agreed that both manure lagoons and composting areas represent potential sources of groundwater contamination. Therefore, for both potential sources of contamination, Ecology was required to either establish technology-based methods of protecting water quality, or where technology-based methods are insufficient, Ecology was required to establish additional water quality based effluent limitations. *Waterkeeper Alliance*, 399 F.3d at 492; WAC 173-226-070(1)-(3). As explained in section II, *infra*, the methods contained within the permits for these sources are not AKART. For the same reasons that conditions pertaining to composting areas and existing manure storage lagoons do not represent "the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants

associated with a discharge," they also fail to provide an additional layer of protection to water quality standards. WAC 173-201A-020; *See Port of Seattle*, 151 Wn.2d at 588.

For land application fields, Ecology designated the amount of nitrates in soil by parts per million that pose varying degrees of risks to groundwater. The applicable conditions do not require that a CAFO cease applying nutrients to a high risk field until that field has been in the high risk category for three years. A CAFO must enhance nitrogen removal, reduce nitrogen application, assume no nitrogen losses, and submit a nutrient budget to Ecology for approval. However, Ecology admitted that a CAFO would not be in violation of its permit as long as the CAFO was taking the required actions under the permit, even if the field remained in the "high risk" category.

Permit conditions pertaining to existing manure lagoons, compost areas, and high risk fields are inconsistent with the permits' requirement that "[d]ischarges conditionally authorized by this permit must not cause or contribute to a violation of water quality standards." AR at 6922. State water quality standards must be "enforced through meaningful limitations" in federal NPDES permits. *American Paper Inst., Inc. v. U.S. Envtl. Prot. Agency*, 996 F.2d 346, 350 (D.C. Cir. 1993). Although the permits prohibit discharges that would violate water quality standards, they allow for operation of production areas that pose a risk of doing precisely that. Consequently, the PCHB order is contrary to law where it concluded that the permits were protective of groundwater quality standards.

IV. GROUNDWATER AND SURFACE WATER MONITORING REQUIREMENTS

A. LEGAL PRINCIPLES

Under the Clean Water Act, every NPDES permittee is required to "monitor its discharges into the navigable waters of the United States in a manner sufficient to determine whether it is in

compliance with the relevant NPDES permit." *Nat. Res. Def. Council v. County of Los Angeles (NRDC)*, 725 F.3d 1194, 1207 (9th Cir. 2013) (citing 33 U.S.C. § 1342(a)(2); 40 C.F.R. § 122.44(i)(1)). "That is, an NPDES permit is unlawful if a permittee is not required to effectively monitor its permit compliance." *Id.*

Washington regulations state that monitoring "may" be required of "[a]ny discharge authorized by a general permit." WAC 173-226-090(1)(a). Monitoring is limited to methods that may "be reasonably required by the department, including the installation, use, and maintenance of monitoring equipment or methods." *Id.*[13]

B. ANALYSIS

The Board affirmed the monitoring requirements of the Permits, which include visual inspections for surface water monitoring under condition S5.A, soil monitoring for groundwater, and groundwater monitoring under limited circumstances.

Soundkeeper contends that soil monitoring and visual inspections will fail to ensure that the CAFOs are not discharging in violation of their permit conditions. Soundkeeper argues that monitoring of surface water discharges requires analytical water quality sampling close to the point of discharge. To determine groundwater quality, Soundkeeper claims that the permits should require groundwater monitoring through installation of wells.

Ecology and the Dairy Federation assert that the current monitoring requirements are sufficient to ensure that CAFOs are operating in compliance with permit terms. With regard to

[13] Use of the word "may" in the state regulations pertaining to monitoring suggests that monitoring discharges is not strictly required to comply with the WCPA. *See* WAC 173-226-090(1)(a). However, the CWA provides that a state may not adopt a standard of performance less stringent than that required under the CWA. 33 U.S.C. § 1370.

surface water monitoring, Ecology argues that there is no reason to require additional monitoring of surface water discharge if the fact that the discharge occurred is a violation in itself. With respect to groundwater, Ecology and the Dairy Federation both contend that groundwater monitoring is impracticable and does not provide information that would allow a CAFO to know whether its actions contribute to groundwater contamination. Ecology and the Dairy Federation assert that soil monitoring is better suited to this task.

We agree with Soundkeeper that the permits do not impose sufficient surface or groundwater monitoring requirements on CAFOs. Without water quality monitoring, the permits, as written, contain inherent contradictions that would render them unenforceable.

1. SURFACE WATER MONITORING

Ecology acknowledged that both tile drains and emergency winter land applications may result in discharges to surface water. Although the permits largely prohibit such discharges as written, in practice, activities allowed under the permits may lead to unauthorized discharges if permit conditions are not observed. Surface water monitoring is therefore necessary to ensure that CAFOs engaged in these practices comply with the permits.

With regard to tile drains, Jennings agreed that there is no water quality monitoring required beyond "visual inspections to make sure the [field edge] practices are working." AR at 3964. However, when asked whether Ecology would know if water quality standards are violated based on this monitoring, Jennings admitted that "we would not actually measure what is coming out of the tile drain, no. The permit wouldn't require actual monitoring [of] what's coming out of the tile drain." *Id.* at 3964-65.

With respect to emergency winter land applications, Jennings acknowledged that due to field conditions, emergency winter land application posed a higher risk of surface water discharge. When asked why, in light of this risk, Ecology did not require monitoring to ensure that CAFOs did not discharge to surface water, Jennings explained that surface monitoring was not required because Ecology would not know where the application occurs or where the discharge might come from, making it difficult to determine where to set up monitoring to get good data.

Monitoring is necessary because it is meant to ensure that dischargers act in compliance with permit conditions. *NRDC*, 725 F.3d at 1207. For this reason, Ecology's position that "monitoring by taking a sample to confirm a violation is unnecessary when the fact of the discharge itself is a violation in the first instance" is not well taken. *See* Br. of Ecology at 30-31. As illustrated in tile drain and emergency winter land application examples, CAFOs engage in activities that have a potential to discharge into surface water. But by declining to provide for adequate monitoring of these activities, Ecology undermines its ability to enforce the effluent limitations in the permits. That is, an NPDES permit is unlawful if a permittee is not required to "effectively monitor its permit compliance." *NRDC*, 725 F.3d at 1207.

2. GROUNDWATER MONITORING

The PCHB's order concluding that groundwater monitoring was unnecessary was not supported by substantial evidence. Each permit contains a broad yet unequivocal condition providing that "[d]ischarges conditionally authorized by this permit must not cause or contribute to a violation of water quality standards." AR at 6922, 6980. Ensuring compliance with this condition requires analyzing the effects of a CAFO's activities on groundwater. However, on multiple occasions, Ecology has expressed that the sole way to determine the quality of

groundwater is by groundwater monitoring, which the permit requires only in limited circumstances.

According to Ecology's literature review, groundwater monitoring, unlike soil monitoring, is the single method available to ascertain a CAFO's direct impact on groundwater quality. Specifically, the literature review summarized the available research and determined that,

> The majority of researchers agree that groundwater monitoring is the only way to definitively determine impacts to groundwater quality from residual soil nitrate. Monitoring other media, such as soils, can indicate whether manure management practices need to be adjusted, but it cannot conclusively determine the extent of the impacts to groundwater quality.

Id. at 7212.

Ecology's experts testified consistently with the literature review's determination. For example, Redding stated that "the only way to know" whether existing manure lagoons or nutrient field application impacts groundwater, or causes or contributes to a groundwater quality violation, is through groundwater monitoring. *Id.* at 4207. Dairy Federation experts similarly explained that groundwater monitoring is the only reliable method for assessing nitrate impacts on groundwater.

Despite this evidence, Ecology and the Dairy Federation contend that groundwater monitoring should not be required because the lag time between the activity that emits pollutants into soil and the pollutant reaching groundwater makes it difficult to determine whether that activity caused the contamination. The record supports Ecology's and the Dairy Federation's position that indeed, it would be difficult to ascertain which activity caused elevated levels of contaminants in groundwater where a groundwater monitoring well sits downgradient from multiple pollutant emitting practices. The record also supports Ecology and the Dairy Federation's position that soil monitoring is better suited to determining "conditions at that time and location."

Id. at 7230. Notably, in arguing that groundwater monitoring should be required, Soundkeeper is not suggesting that groundwater monitoring should replace soil monitoring.

However, according to Ecology's literature review, soil nitrate data taken from soil monitoring is limited and "cannot be used to extrapolate conditions in other locations, at other depths, or in groundwater." *Id.* Soil monitoring simply "cannot provide assurance that groundwater quality has been protected." *Id.* While soil monitoring can be useful in some respects, it does not provide complete information regarding the impact of a CAFO's activities on groundwater.

As stated above, monitoring requirements in permits exist to ensure that a permittee can effectively monitor its permit compliance. *NRDC*, 725 F.3d at 1207. Given that CAFOs are forbidden from engaging in any activity that would "cause or contribute to a violation of water quality standards," AR at 6922, soil monitoring on its own is inadequate to ensure compliance with this condition. Although groundwater monitoring wells are required under limited circumstances, for example, when existing lagoons are less than two feet above groundwater or when nitrate rates in land application fields are high risk for three consecutive years, under these permits, CAFOs may still unknowingly violate groundwater standards. Composting is an example of one practice that might contribute to groundwater contamination. Consequently, the PCHB's order concluding that soil monitoring is sufficient for groundwater is not supported by substantial evidence.

V. NUTRIENT MANAGEMENT PLANS

Soundkeeper next argues that the PCHB's order approving an NPDES permitting process that does not subject site specific nutrient management practices to public scrutiny is contrary to law. Ecology responds that the permit conditions comply with NPDES permitting statutes and regulations because every requirement in the federal regulation is incorporated in the general

permits that were made available for public comment and review. We agree with Soundkeeper that the PCHB erred in approving the combined permit because the permitting procedure does not provide for public comment on site specific nutrient management plans.

A. LEGAL PRINCIPLES

Nutrient management plans are a critical component of NPDES waste discharge permits that must be subject to public comment before the terms contained in the plan are incorporated into enforceable permit conditions. 33 U.S.C. § 1251(e). Specifically, the CWA "unequivocally and broadly declares," that "'[p]ublic participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program established by the Administrator or any State under this Act shall be provided for, encouraged, and assisted by the Administrator and the States.'" *Waterkeeper*, 399 F.3d at 503 (quoting 33 U.S.C. § 1251(e)). Accordingly. the public must have an opportunity to be heard before any NPDES permit is issued. *Id.* Because a nutrient management plan is a type of effluent limitation, the CWA requires that Ecology ensure that the public has an opportunity to participate in its development. *Community Ass'n for Restoration of Env't v. Dep't of Ecology*, 149 Wn. App. 830, 849-50, 205 P.3d 950 (2009).

A "nutrient management plan," must, at minimum, establish best management practices and effluent limits pertaining to various potential sources of contaminant discharge. 40 C.F.R. § 122.42(e)(1). Nutrient management plans must contain several site-specific elements, including the requirement to "[e]stablish protocols to land apply manure, litter or process wastewater in accordance with site specific nutrient management practices," and to "identify appropriate site specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants." 40 C.F.R. § 122.42(e)(1)(viii), 122.42(e)(1)(vi). In

addition, nutrient management plans must describe the fields where land application occurs and the field-specific rates of nutrient application. 40 C.F.R. § 122.42(e)(5).

In seeking an NPDES permit, CAFO owners submit a notice of intent along with a nutrient management plan. 40 C.F.R. § 122.23(h)(1). After the permitting authority makes an initial determination approving the permit, the permitting authority must notify the public and make the notice of intent and accompanying nutrient management plan available for public review. *Id.* Upon approval, the terms of the nutrient management plan are incorporated into the general permit. *Id.*

B. ANALYSIS

In the permits involved here, a CAFO operator seeking coverage no longer must develop effluent limitations for review and approval by Ecology. Instead, Ecology created a uniform set of permit conditions in the general permits. The public had an opportunity to review and comment on the general terms. Within six months after receiving a permit, a CAFO operator must create a manure pollution prevention plan "designed and implemented to limit the discharge of manure, litter, process wastewater, other organic by-products, 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." AR at 6993.

The PCHB approved of Ecology's decision to change the permit application process and to move the nutrient management plan requirements into the general permit conditions. The PCHB concluded that the permits incorporated every requirement in the federal nutrient management plan.

The PCHB erred in approving Ecology's permitting scheme because its decision was contrary to the law. In particular, we agree with Soundkeeper that federal implementing regulations

of the CWA unambiguously provide that site specific information must be included in a nutrient management plan subject to public comment and review.

Although nutrient management plans must include site specific information, and the nutrient management plans must be submitted for public review and comment, Ecology has reimagined the permitting process such that the public does not have an opportunity to comment on site-specific issues. 40 C.F.R. § 122.42(e)(1)(viii),122.42(e)(1)(vi), 122.42(e)(5). Ecology maintains that it amended the permitting scheme as a matter of practicality and efficiency, but it provides no legal support for its decision to depart from the federal regulations.

In *Waterkeeper*, the court held that nutrient management plans must be subject to public review because the public has a "'right to assist in the "development, revision, and enforcement of . . . [an] *effluent limitation*.'" 399 F.3d at 503 (emphasis in original) (quoting 33 U.S.C. § 1251(e)). Here, the conditions incorporated into the general permits subject to public review are effluent limitations; the manure pollution prevention plan addresses how an individual CAFO will implement the effluent limitations at its facility.

However, the court in *Waterkeeper* was also deliberate in stating that public participation must not be limited to a nutrient management plan's effluent limitations. *Id.* at 504. The court explained that, "[s]ince nutrient management plans embody all the relevant 'site specific nutrient management practices,' it is clear that . . . nutrient management plans are a *sine qua non* of the 'regulation, standard, plan, or program' [the EPA] established to regulate land application discharges." 399 F.3d at 504. The court stated that it would have required public comment on the nutrient management plan even if there were no effluent limitations included within the plan. *Id.*

Here, the manure pollution management plans are the sole source of the site-specific information required under the federal WCA regulations. *See* 40 C.F.R. § 122.42(e)(1)(viii), 122.42(e)(1)(vi), 122.42(e)(5). The public has no opportunity to comment on these managerial provisions before they become an integrated and enforceable part of a CAFO's operations. Arranging the permit application in this manner contravenes the policy objective in the CWA that aims to encourage "public participation in the development and enforcement of nutrient management plans." *Waterkeeper*, 399 F.3d at 509. Consequently, the PCHB's decision with regard to this permitting scheme is contrary to law.

VI. CLIMATE CHANGE

A. LEGAL PRINCIPLES

Where, as with regard to this issue, the original administrative action was decided on summary judgment, we must overlay the APA standard of review with the standard of review for a summary judgment motion. *Verizon Nw., Inc.*, 164 Wn.2d at 916. We evaluate the facts in the administrative record de novo and in the light most favorable to the nonmoving party. *Id.* We review the PCHB's legal conclusions under the APA's "error of law" standard, which allows us to substitute our view of the law for that of the Board. *See id.* Summary judgment is appropriate if the undisputed material facts entitle the moving party to judgment as a matter of law. *Id.*

Central to the State Environmental Policy Act (SEPA), RCW 43.21C.030(2)(a) directs that "to the fullest extent possible," all branches of government of this state, including state agencies, "[u]tilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on the environment." In addition, SEPA commands agencies to

"[i]nitiate and utilize ecological information in the planning and development of natural resource-oriented projects." RCW 43.21C.030(2)(h). SEPA is intended to act as a "supplement to or an overlay of other governmental authorization." *Polygon Corp. v. City of Seattle*, 90 Wn.2d 59, 66, 578 P.2d 1309 (1978).

All agencies are tasked with carrying out SEPA's policies, which include "[f]ulfill[ing] the responsibilities of each generation as trustee of the environment for succeeding generations," RCW 43.21C.020(2)(a), as well as "[a]ttain[ing] the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences." RCW 43.21C.020(2)(c). While the mandates under SEPA "apply to the State generally, they speak with an insistent voice to the Department of Ecology." *Puget Soundkeeper All.*, 189 Wn. App at 148.

B. ANALYSIS

The PCHB dismissed Soundkeeper's argument regarding climate change on summary judgment, ruling that "[w]hile PSA makes extensive policy arguments about why Ecology should consider climate change in the Permits, it does not cite to a statutory requirement that Ecology must address climate change in its issuance of the Permits under RCW 90.48." AR at 2602.

Soundkeeper contends that consistent with the policy objectives outlined in SEPA, and the direct command that agencies must act to carry out these policies, Ecology was required to "consider climate change in writing the Permits." Opening Br. of Soundkeeper at 50. Referring to Ecology's statements that Ecology did not review information pertaining to climate change when drafting the permits, Soundkeeper argues that Ecology cannot now insist that it did consider climate change prior to issuance.

Ecology responds that this issue was properly dismissed on summary judgment because there is no provision within ch. 90.48 RCW or the CWA compelling it to consider climate change while drafting waste discharge permits. Ecology asserts that although Soundkeeper relied on Ecology's reports in arguing that Ecology was required to consider the permits' toll on climate change, these reports were produced pursuant to its responsibility under the Washington Clean Air Act and are not relevant here.

We agree with Soundkeeper that Ecology maintains a responsibility to consider the impacts of climate change under SEPA to the extent that it must interpret its rules and statutes consistently with SEPA's mandates. *See Puget Soundkeeper All.*, 189 Wn. App at 148. We have explained that Ecology has a particular obligation under SEPA to act in accord with SEPA's policies by ensuring that it does not "condon[e] violations of its own standards" in issuing waste discharge permits. *Id.*

Here, insofar as the above discussion shows that Ecology did not act consistently with its implementing regulations under the CWA and WPCA, it also failed to act in accord with SEPA's underlying policies. *See id.* Accordingly, the PCHB's decision was contrary to law when it dismissed this issue on summary judgment because climate change must be considered to some extent. *Id.*

VII. T-SUM 200

The Dairy Federation argues that the PCHB erred in affirming T-SUM 200 as the spring application standard. Specifically, the Dairy Federation contends that the PCHB's findings that the Dairy Federation initially recommended T-SUM 200 and that T-SUM 200 is appropriate for colder Eastern Washington climates were not supported by substantial evidence. In addition, the Dairy Federation asserts that T-SUM 200 does not meet AKART requirements as applied to Eastern

Washington because that standard has not been tested in such climates and evidence suggests that it does not yield earlier crop production.

Ecology responds that the PCHB's finding that the Dairy Federation initially recommended the use of T-SUM 200 as a standard method for determining crop application was supported by substantial evidence. Moreover, because the purpose of AKART is to prevent discharge of pollutants and not to ensure maximum crop yield, Ecology argues that T-SUM 200 satisfies AKART regardless of whether it is the most successful tool to ensure crop productivity.

We agree with Ecology that the PCHB's finding that the Dairy Federation had initially recommended the use of T-SUM 200 is supported by substantial evidence. In addition, the Dairy Federation has not met its of burden of demonstrating that the PCHB's decision to affirm Ecology's use of the T-SUM standard was unsupported by substantial evidence or contrary to law.

A. SUBSTANTIAL EVIDENCE SUPPORTS THE PCHB'S FINDING

With regard to the PCHB's contention that it did not request use of T-SUM 200, the record reflects that during public comment on preliminary draft permits, the Dairy Federation objected to use of "Spring green up" as the term defining when spring nutrient application can begin. AR at 7874. Explaining that spring green up is "not a term [the Dairy Federation] understand[s]," the Dairy Federation stated that "T-Sum 200 is one standard timing guideline." *Id.* The Dairy Federation asked that Ecology revise the spring green up language "to include understandable terms that are consistent with the guidelines of NRCS, WSDA, CDs, and other recently developed guidelines." *Id.* The comment provided by the Dairy Federation also provided a weblink to a study discussing T-SUM 200.

Dan Wood, the executive director of the Washington State Dairy Federation, described the nature of the Dairy Federation's concern when it commented on the proposed spring green up term during the hearing before the PCHB. Wood explained that spring green up "was a very fuzzy phrase and that there are other options out there that are more specific, and T-sum 200 was an example of that, but it is certainly not the only example." *Id.* at 5127.

The Dairy Federation contends that its comment does not amount to a request that the permits incorporate T-SUM 200 as a universal standard for spring application of nutrients but rather a suggestion of one of type of standard. However, a fair-minded person would be persuaded that the Dairy Federation's discrete reference to T-SUM 200 in the comment, its inclusion of a weblink to a study addressing T-SUM 200, and its lack of citation to any alternate standards, amount to a request to use T-SUM 200 in place of the former "spring green up" language. *See Port of Seattle*, 151 Wn.2d at 588. The PCHB's finding was thus not "clearly erroneous." *Id.*

Even if the PCHB erred in making this finding, the Dairy Federation has not provided any argument or support demonstrating that the PCHB was precluded from incorporating T-SUM 200 into the permits for this reason. "Where no authorities are cited in support of a proposition, the court is not required to search out authorities, but may assume that counsel, after diligent search, has found none." *DeHeer v. Seattle Post-Intelligencer*, 60 Wn.2d 122, 126, 372 P.2d 193 (1962).

B. T-SUM 200 SATISFIES AKART AS APPLIED TO EASTERN WASHINGTON

The Dairy Federation assigns error to the PCHB's finding that T-SUM 200 was an appropriate limitation for Eastern Washington climates. However, the PCHB did not make an explicit finding that T-SUM 200 was appropriate for Eastern Washington. Instead, the PCHB more broadly approved the permits as written, and the permits included the T-SUM 200 standard.

Therefore, the Dairy Federation's argument can be more properly construed as a challenge to the PCHB's decision to approve permit conditions including the T-SUM 200 standard. The Dairy Federation's argument that T-SUM 200 does not satisfy AKART as applied in Eastern Washington forms the legal basis for this claim.

Here, the Dairy Federation has not met its burden of demonstrating that the PCHB order affirming the use of T-SUM 200 is contrary to the law, unsupported by substantial evidence, or arbitrary and capricious. *See Snohomish County*, 187 Wn.2d at 357. The T-SUM 200 standard for determining when to begin spring manure application satisfies AKART requirements because it reflects "the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge." WAC 173-201A-020.

The Dairy Federation has not provided any support for its assertion that use of T-SUM 200 in Eastern Washington "prevents the application of nutrients when crops start growing, thereby limiting the ability to grow a productive crop that optimizes the use (and treatment) of nutrients." Reply Br. of Dairy Federation at 8-9. Although the record supports the Dairy Federation's assertion that healthier crops will absorb greater quantities of nutrients, the Dairy Federation has not identified any evidence that application of T-SUM 200 would necessarily inhibit crop growth in Eastern Washington.

In support of its claim that T-SUM is an inappropriate standard as applied to Eastern Washington, the Dairy Federation cites the following testimony from its expert, David Haggith:

> Q: I want to return to T-sum 200 briefly. Just to be clear, does T-sum 200—was it designed to work in Eastern Washington?
> A: No.
> Q: And does it work in Eastern Washington?

> A: Not that I've seen. The climate is just so different. I mean, talking about high desert versus a temperate coastal zone. And also the crops like alfalfa that are just—it was never designed for that sort of crop.

AR 5020. Haggith's testimony is ambiguous; it is unclear what he meant when he said that T-SUM 200 does not "work" in Eastern Washington. *See id.* In his expert report, Haggith excerpted a passage from a study which stated that use of T-SUM 200 in western Oregon, "produces feed 1 to 3 weeks earlier," but in "colder, drier climates such as eastern Oregon, a consistent economic increase in early forage production has not been realized from T-Sum application." *Id.* at 5469.

To the extent that Haggith meant T-SUM 200 does not "work" because it does not support "early forage production," that fact does not establish a deleterious effect on nutrient uptake from application of T-SUM in colder climates. *See id.* at 5020, 5469. In addition, the fact that T-SUM 200 is not *as* productive at promoting early crop growth in Eastern Washington as it is in western Washington does not undermine its viability as a useful, standardized tool to determine when to begin spring application of nutrients. The AKART standard is a tool designed to prevent, control, or abate discharges that result in pollution. WAC 173-201A-020. It does not require promotion of the greatest crop yields.

In addition, taking the Dairy Federation's argument to its logical conclusion would require us to determine that imposition of a universal standard such as T-SUM 200 in the scope of a general permit cannot satisfy AKART unless it has been tested in every microclimate. We decline to take such a position, especially given the lack of evidence that use of T-SUM 200 is ineffective at preventing discharge of pollutants when applied in Eastern Washington.

Ecology evaluated three standards, including T-SUM 200, in its literature review. Redding testified that during drafting discussions, the permit team selected T-SUM because it takes "into

account site-specific conditions" based on local temperature variations. AR at 4270. Because the Dairy Federation has failed to present any evidence demonstrating that use of T-SUM 200 would inhibit plant uptake of nutrients or that T-SUM 200 would otherwise fail to prevent pollutant discharge from land application, we defer to the agency's decision on this technical, factual dispute. *See Puget Sound Harvesters Ass'n*, 182 Wn. App. at 867.

CONCLUSION

We hold that the PCHB erred in approving the permits as written for the following reasons. First, although the permit conditions satisfy AKART requirements for animal pens and corrals, they do not meet this standard for existing manure lagoons or composting areas. Second, while the effluent limitations in the form of best management practices prevent violations of surface water quality standards for tile drains in the combined permit, and for emergency winter land applications in both permits, they do not provide adequate protection for tile drains in the state only permit. In addition, the permits do not provide adequate protection of groundwater quality for composting areas and existing manure lagoons. Third, soil sampling and visual inspections are insufficient monitoring methods to ensure compliance with the permits. Fourth, the combined permit fails to provide for public participation in development of the site-specific portions of the nutrient management plan as required under the CWA. Fifth, Ecology was required to consider climate change in drafting its permits to the extent that it could not contradict its own standards promulgated pursuant to the CWA and WPCA. Finally, the T-SUM 200 standard for field application satisfies AKART requirements as applied to Eastern Washington.

Accordingly, we affirm in part and reverse in part and remand the permits to Ecology for rewriting consistent with this opinion.

CRUSER, J.

We concur:

LEE, C.J.

SUTTON, J.