BEFORE THE OREGON DEPARTMENTS OF AGRICULTURE AND ENVIRONMENTAL QUALITY

Proposed CAFO (Confined Animal Feeding Operation) General Permit Registration – Straight Ranch, operated by Arie deJong	June 29, 2020 Comment in Opposition

I. INTRODUCTION

The undersigned animal welfare, environmental, family farm, public health, rural advocacy, and wildlife protection organizations—on behalf of themselves and their hundreds of thousands of members and supporters in the State of Oregon—submit the following comments on the application of Straight Ranch (Application). The facility's Animal Waste Management Plan (AWMP) is wholly inadequate. Moreover, as the recent Lost Valley Farm regulatory catastrophe illustrates, concentrated animal feeding operations (CAFOs) constitute unjustifiable risks to Oregon's environment, environmental justice, public health, animal welfare, and local rural economies.[1] Therefore, the undersigned organizations urge the Oregon Department of Agriculture (ODA) and the Oregon Department of Environmental Quality (ODEQ) (the Agencies) to deny the Application and institute a moratorium on new CAFOs in Oregon.

This decision also implicates Governor Brown's recent Climate Executive Order (E.O.) No. 20-04, which directed both ODA and ODEQ to take actions to reduce and regulate Greenhouse Gas (GHG) emissions.[2] Under the E.O. your

[1] Lost Valley Farm was a permitted dairy CAFO in Boardman, Oregon that spilled manure and other waste; went into business without a legal and practical source of water; resorted to the stockwatering exemption in a designated Critical Groundwater Area and extracted water from an already depleted groundwater aquifer; went bankrupt and failed to pay its suppliers for goods and services rendered; and violated its permit more than two hundred times. The state was forced to expend its limited resources to shut down the CAFO and manage the fallout.

[2] https://www.oregon.gov/gov/Documents/executive_orders/eo_20-04.pdf.

agencies are subject to both general and specific directives set forth to accomplish a state-wide strategy for reducing GHG emissions (1) at least 45% below 1990 emissions levels by 2035 and (2) at least 80% below 1990 emissions levels by 2050. We strongly urge you to consider the impacts of approving additional livestock farming operations in light of this requirement as well.

II. SUMMARY

Straight Ranch proposes to operate a Large CAFO of 2,500 heifers in Klamath County, Oregon (AWMP, p. 1). The heifers would be housed in open lots in the winter months and pastures in the summer months, the latter of which appear to be within the boundaries of the Lower Klamath National Wildlife Refuge. We strongly recommend that the Agencies deny the Application due to the fact that the AWMP is fundamentally inadequate and the proposed location for this operation raises serious concerns in terms of harm to the environment, environmental justice, public health, animal welfare, and the local economy.

III. COMMENTS ON THE STRAIGHT RANCH AWMP

As an initial matter, the AWMP's site descriptions are vague and the site layout appears to be structurally flawed. The AWMP states that solid manure will be left in the pens, mounded, and packed for bedding in the fall. It states that what is left of the solid manure will be stored within the pens before being hauled to the manure handling area, fields, and export. However, the "manure handling area" is not described nor shown on the maps provided. Furthermore, it identifies that liquid manure will be deposited in the pens and pasture, which are sloped to facilitate runoff into a collection ditch that leads to a storage pond with a manure drying area. Additional information is needed about the structure and design of the storage pond and manure drying area and how they will be managed (AWMP, p. 1,2). Lastly, the collection ditch on the north side of the pens does not appear to feed into any other ditch, canal, etc., and the AWMP does not state what happens to the liquids collected in that area.

The manure application schedule has severe limitations as well. The AWMP states that the application will be done under favorable climatic and crop conditions, but details are needed for what exactly these entail (AWMP, p. 3). The pastures (where the manure would be applied) also appear to be within the boundaries of the Lower Klamath National Wildlife Refuge. The AWMP does nothing to factor in how those fields are managed by the United States Fish and Wildlife Service (USFWS), and how the two management plans will coexist. Moreover, if there is in fact an intention to put all 2,500 heifers on the Refuge for a period of time, it is unclear how this could happen without (1) a new Special Use Permit (SUP), (2) additional NEPA analysis, and (3) ESA consultation on the new

SUP. This is particularly true if the Straight Ranch does not already have a permit for use of the Refuge, which the permit documents fail to mention.[3]

The mechanical operation and maintenance section also necessitates a deeper analysis. The AWMP states that care is taken to maintain the integrity of the compacted protective seal or 'hard pan,' but more information is needed as to what this means. It is unclear if they are referencing the natural B horizon of the soil or a farm-manager-made layer (AWMP, p. 4). The AWMP omits how exactly the operator will care for this layer, what the function of the layer tangibly provides as a protective seal against groundwater pollution, and what leakage rate the hard pan is designed to allow. Along with these additions, there needs to be a more robust discussion of how the impact on local waterways will be minimized, specifically the west canal and Lower Klamath Lake, which are the closest receiving waterways.

The AWMP's record keeping provisions fall short in several ways as well. In terms of monitoring and testing, the AWMP does not include a statement for what actions will be taken if crop field soil tests show high residual soil nitrate levels in the fall (AWMP, p. 5). The NRCS soil testing section is also unsatisfactory (AWMP, p. 3). Soil tests must be current in order to evaluate appropriate waste application rates. For an operation of this size, it is not sufficient to estimate a soil phosphorus level based on part of the acreage. Soil tests must be completed and a phosphorus index must be calculated for specific sites. The calculations themselves also appear to have glaring mistakes. For example, the bedding, which the AWMP asserts will be applied in the winter, is not shown in the calculations at all. The AWMP also states that there would be 98% separation with the scraping of the 44 acres of pens, which is highly unlikely, and includes no reference as to how this percentage was determined (Oregon Animal Waste Management Design Aid ("ORAWM"), p. 3). Overall, the AWMP is fundamentally inadequate.

IV. COMMENTS ON THE IMPACT OF STRAIGHT RANCH AND CAFOS GENERALLY

The Agencies should deny the Application and institute a moratorium on new industrial-scale (2,500 cows or more) dairy CAFOs in Oregon. First, Straight Ranch and other industrial CAFOs constitute unjustifiable risks to the environment, draining Oregon's vulnerable groundwater and surface water, polluting treasured wildlife habitats, and contributing to climate change. Second, Straight Ranch and other CAFOs disproportionately harm Oregon's low-income communities and communities of color. Third, Straight Ranch and other CAFOs harm public health

[3] *Final Comprehensive Conservation Plan/Environmental Impact Statement (CCP/EIS) for Lower Klamath, Clear Lake, Tule Lake, Upper Klamath and Bear Valley National Wildlife Refuge,* U.S. FISH & WILDLIFE SERVICE (accessed June 22, 2020).

by contaminating drinking water, producing emissions that cause respiratory illness, and breeding new viruses and antibiotic resistant pathogens. Fourth, they compromise animal welfare through the use of intense confinement. Finally, they are putting Oregon's remaining family farms out of business by overproducing milk and driving down prices to historically low levels.

A. Threats to Environment

If permitted, Straight Ranch will give rise to a panoply of environmental risks. Klamath County and the Klamath Basin are home to many threatened lakes, springs, and rivers that are essential habitat for diverse and abundant populations of resident and migratory wildlife.[4] Bird life, including migrating waterfowl, breeding waterfowl, molting waterfowl, and non-game water birds, is abundant, but declining in the area. About 80% of migrating waterfowl on the Pacific Flyway pass through the Klamath Basin on both spring and fall migrations. Several lakes within the basin are also a part of the Important Bird Area (IBA) Program, a global effort identifying and attempting to conserve areas that are vital to birds and other biodiversity. Indeed, the national wildlife refuges in the Klamath Basin were created for the explicit purpose of protecting and conserving the area's unique waterfowl and shorebird populations, with the Lower Klamath Refuge established in 1908 as the nation's first waterfowl refuge.

Lower Klamath National Wildlife Refuge has been especially harmed by recurring drought. For example, in the drought of 2018, federal officials drained the limited water remaining in wetlands on Lower Klamath Refuge during the peak of spring waterfowl migration. In order to maximize water deliveries to private agribusiness interests on the federal Klamath Project – already set to receive some $10 to $12 million in federal drought assistance – officials took 11,000 acre-feet of publicly-owned water from the drought-diminished refuge, then directed the refuge's most senior water rights during the spring, summer, and fall to supply private agribusiness crops grown on the refuges.

The Lower Klamath Refuge currently allows a harmful commercial land leasing program on its public lands. Further harm to these lands from a CAFO should not be allowed. The Klamath area refuge leaseland program – which is unique in the nation and distinct from more well-known cooperative farming programs on many National Wildlife Refuges – annually displaces some 22,000 acres of refuge wetland habitat on Lower Klamath and Tule Lake national wildlife refuges, allows the use of toxic pesticides, and oversees the wholesale mechanized destruction of baby and adult birds in their nests each spring.

Since 2012, in large part because this leaseland program consumes most or all of the refuges' most senior water rights, tens of thousands of birds on the

[4] *Discover Klamath*, KLAMATH VISITOR & CONVENTION BUREAU, https://www.discoverklamath.com (last visited June 17, 2020).

Klamath's refuges have died for lack of water as a result of decisions made by the U.S. Department of Interior. With few wetland acres available due to lack of water, large numbers of waterfowl pack together during migration periods, leading to lethal disease outbreaks. Refuge staff estimated that some 20,000 birds perished this way in 2014. Similar conditions on these refuges sparked massive waterfowl die-offs in 2012 and 2013.Also important to the region are the fish species, which play an important role in the Klamath Basin food chain. The Klamath Basin's native fish species include the shortnose and Lost River sucker, both federally-listed as endangered species under the Endangered Species Act. The Basin is also habitat for lampreys (Pacific and Pit-Klamath brook), minnows (tut chub and blue chub), sculpin (Klamath Lake, marbled, and slender), and the Klamath redband trout. While the list of threatened and endangered species in the area is significant, the most hard-hit by the approval of the Straight Ranch CAFO will be aquatic species and those sensitive to GHG emissions.[5]

In addition to direct harms to species from GHG emissions, the Klamath Basin itself is also uniquely vulnerable to the effects of climate change, which result in reduced snowpack and earlier snowmelt. The Klamath Basin region has, as discussed above, experienced a history of severe droughts, which will likely continue to increase in number and intensity as a result of climate change.[6] The crises have resulted in farmland being left fallow, river flows so low they caused a mass fish die-off, recurring toxic algae blooms that fouled reservoirs, and extreme wildlife population declines.[7] Toxic pollution in the Klamath Basin waters is also an increasing concern, and is a direct result of agricultural development.[8] Klamath County's poor air quality continues to threaten the population's health as well. The EPA has designated it as a "non-attainment area," a geographic area that does not meet primary air quality standards.[9]

CAFOs exacerbate these existing threats to Oregon's environment. CAFOs consume "a massive amount of water" for various operational purposes, such as watering animals and irrigating the crops upon which they rely for manure

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[5] *Final Comprehensive Conservation Plan/Environmental Impact Statement (CCP/EIS) for Lower Klamath, Clear Lake, Tule Lake, Upper Klamath and Bear Valley National Wildlife Refuge,* U.S. FISH & WILDLIFE SERVICE (accessed June 22, 2020).

[6] The Associated Press, *Gov. Kate Brown Declares Drought in Klamath County*, OREGON LIVE (March 5, 2020), https://www.oregonlive.com/environment/2020/03/gov-kate-brown-declares-drought-in-klamath-county.html

[7] *Id.*

[8] *Klamath River Water Quality*, OREGON WILD, https://oregonwild.org/waters/klamath/the-klamath-river/klamath-river-water-quality (last visited June 17, 2020).

[9] *Klamath County Public Health*, KLAMATH COUNTY OREGON, https://www.klamathcounty.org/383/Air-Quality (last visited June 17, 2020).

management.[10] Lost Valley Farm, for example, used nearly one million gallons of water each day just for stockwatering and dairy operations (i.e., not counting water used for irrigation, which is the biggest demand) —despite the fact that it reached only one fraction of its permitted size.[11] "Because of this demand for water, CAFOs tend to seek sites above major aquifers," since "water is essentially treated as a free good after it is removed from the ground."[12] Oregon's rivers suffer from low flows and warming water, and its groundwater and surface water resources are overallocated.[13] There are twenty-two designated groundwater administrative areas in Oregon, including critical groundwater areas, groundwater limited/classified areas, and those areas withdrawn from appropriation.[14] CAFOs further burden these critical resources at the expense of Oregon's other water users, including homes, family farms, fish, and other wildlife.

Water quality is also threatened by the accumulation of manure in restricted areas.[15] A single dairy CAFO with one thousand milking cows produces as much waste as a city of 164,500 humans.[16] Unlike cities, however, CAFOs do not treat their waste, and EPA has found that "[t]raditional means of using manure are not adequate to contend with the large volumes present at CAFOs."[17] The industry standard practice of storing raw manure in holding lagoons and disposing of it by land application pollutes groundwater and surface water resources[18] via sprayfield runoff and lagoons that leak, seep, and catastrophically breach.[19] Manure

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[10] *See* WILLIAM J. WEIDA, CONCENTRATED ANIMAL FEEDING OPERATIONS AND THE ECONOMICS OF EFFICIENCY 22 (Mar. 19, 2000), https://www.sraproject.org/wp-content/uploads/2017/10/cafosandtheeconomicsofefficiency.pdf.

[11] Tracy Loew, *State officials let mega-dairy use loophole to tap endangered Oregon aquifer*, STATESMAN JOURNAL (Mar. 22, 2018), https://www.statesmanjournal.com/story/tech/science/environment/2018/03/22/lost-valley-mega-dairy-oregon-used-loophole-tap-aquifier-allowed-state-officials/426738002/.

[12] Weida, *supra* note 2, at 22.

[13] Nicole Montesano, *Agriculture use strains limited water resources*, YAMHILL VALLEY NEWS REGISTER (Aug. 21, 2015), https://newsregister.com/drying-times-agriculture-strains-water-resources.

[14] *Groundwater Administrative Areas / Critical Groundwater Areas*, OREGON.GOV, https://www.oregon.gov/OWRD/programs/GWWL/GW/Pages/AdminAreasAndCriticalGWAreas.aspx (last visited Mar. 12, 2020).

[15] EPA, *Risk Assessment Evaluation for Concentrated Animal Feeding Operations* 9 (May 2004) (finding that a dairy CAFO with one thousand cows produces the same amount of waste as a city of 164,500 humans).

[16] *Id* at 2.

[17] *Id.*

[18] *See id.* at 1, 2.

[19] *See id.* at 1; Steve Wing et al., *Environmental Injustice in North Carolina's Hog Industry*, 108 ENVTL. HEALTH PERSP. 225, 225 (2000).

contaminants include nitrates,[20] pathogens,[21] ammonium, phosphate, dissolved solids, metals, metalloids, pharmaceutical chemicals such as antibiotics, and natural and synthetic hormones.[22] As CAFOs continue to expand, the consequences are becoming increasingly apparent. Testing found that samples taken from areas dominated by CAFOs (and agricultural fields where CAFO waste is applied) showed nitrate levels that reached and exceeded 70 mg/L.[23] This is seven times the EPA's Maximum Contaminant Level (MCL) for nitrate, 10 mg/L.[24] A 1996 rural Oregon study showed that 23% of the surveyed population were drinking well water with nitrate concentrations over the 10 mg/L MCL.[25]

Lastly, CAFOs threaten our air quality and further exacerbate climate change. CAFOs produce a plethora of dangerous air emissions, including ammonia, nitrous oxide, nitrogen oxides, methane, volatile organic compounds, hydrogen sulfide, particulate matter, and methanol.[26] A single CAFO is capable of emitting millions of pounds of ammonia each year.[27] CAFOs also produce nearly 75% of all ammonia air pollution in the United States.[28] Ammonia emissions are particularly high for CAFOs that rely on land application for manure management, which volatizes the ammonia in the manure and further increases emissions.[29]Ammonia

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[20] *See* Elizabeth Royte, *The Simple River-Cleaning Tactics That Big Farms Ignore*, NATIONAL GEOGRAPHIC (Dec. 7, 2017), https://www.nationalgeographic.com/news/2017/12/iowa-agriculture-runoff-water-pollution-environment/.

[21] Wing, *supra* note 14, at 225.

[22] STEPHEN R. HUTCHINS ET AL., CASE STUDIES ON THE IMPACT OF CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOS) ON GROUND WATER QUALITY 7–8 (2012).

[23] GERALD H. GRONDIN ET AL., HYDROGEOLOGY, GROUNDWATER CHEMISTRY AND LAND USES IN THE LOWER UMATILLA BASIN GROUNDWATER MANAGEMENT AREA ES-1 & ES-5. At the time of these initial tests, the Oregon trigger level was set equal to EPA's MCL of 10 mg/L but has since been adjusted to the more protective standard of 7 mg/L. *Id.* at ES-6–ES-7.

[24] 40 C.F.R. § 141.11(d).

[25] Thomas J. Mitchell & Anna K. Harding*, Who Is Drinking Nitrate in their Well Water? A Study Conducted in Rural Northeastern Oregon,* J. ENVTL. HEALTH 14, 14 (1996).

[26] *See* OR. DAIRY AIR QUALITY TASK FORCE, FINAL REPORT TO THE DEP'T OF ENVIRONMENTAL QUALITY & DEP'T OF AG. 6 (July 1, 2008), http://library.state.or.us/repository/20; 12/201204101013082/.

[27] Michele M. Merkel, N.Y. State Bar Association presentation at Albany Law School: The Use of CERCLA to Address Agricultural Pollution 1 (Sept. 15, 2006), http://www.environmentalintegrity.org/pdf/publications/The_Use_Cercla.pdf.

[28] *CAFOs Ordered to Report Hazardous Pollution*, WATERKEEPER ALLIANCE (Apr. 11, 2017), http://waterkeeper.org/cafos-ordered-to-report-hazardous-pollution/.

[29] Hribar, *supra* note 30, at 5.

contributes to particulate matter, and these emissions diminish ambient air quality [30] and generate regional haze, which harms important scenic areas.[31] Methane and nitrous oxide emissions also spur climate change.[32]

B. Environmental Justice Concerns

According to EPA's Environmental Justice Index, which combines environmental and demographic data to highlight areas where vulnerable/susceptible populations may be disproportionately impacted by pollution, Straight Ranch poses significant threats to the local population. Specifically, nearby residents are in the lowest quartile both nation- and state-wide in terms of the wastewater discharge indicator, and in the second lowest in terms of particulate matter, ozone parts per billion, lifetime cancer risk, and respiratory hazards.[33]

The population surrounding Straight Ranch's proposed location is economically vulnerable, and likely does not have the resources to oppose new CAFOs that would put their families' health at risk. The median household income in Klamath County, $38,847, is almost a third lower than the state average, $63,426.[34] The rate of homeownership in Klamath County, 43.9%, is also well below the state average of 62.5%.[35]

The racial and cultural demographics in Straight Ranch's vicinity are also a point of concern. American Indian and Alaskan Native people make up 2.36% of the population, more than twice the state average of 0.98%.[36] The U.S. government dissolved the Klamath tribe's reservation when it terminated their federal recognition in the 1950s, and ever since there have been desperate "water wars" between Indigenous tribes and the ever-expanding agricultural industry.[37] One

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[30] CARRIE HRIBAR, NAT'L ASSOC. OF LOCAL BDS. OF HEALTH, UNDERSTANDING CONCENTRATED ANIMAL FEEDING OPERATIONS AND THEIR IMPACTS ON COMMUNITIES 7 (2010), https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf.

[31] *See, e.g.*, MARK GREEN ET AL., THE COLUMBIA RIVER GORGE AIR QUALITY AND VISIBILITY STUDY 21 (2008) (results of study concluding that CAFO emissions are a significant source of haze in the Gorge).

[32] *See, e.g.*, R.M. Duren et al., *California's methane super-emitters*, 575 NATURE 180 (Nov. 7, 2019) (results of a study finding that California dairy CAFOs generate 26% of California's point-source methane emissions—more than the oil and gas sector).

[33] *NEPAssist*, EPA.GOV, https://www.epa.gov/nepa/nepassist (last visited June 17, 2020).

[34] *DataUSA*, DELOITTE & DATAWHEEL, https://datausa.io/ (last visited June 17, 2020).

[35] *Id.*

[36] *Id.*

[37] Tony Barboza, *Water War Between Klamath River Farmers, Tribes Poised to Erupt*, LOS ANGELES TIMES (May 7, 2013), https://www.latimes.com/local/la-xpm-2013-may-07-la-me-klamath-20130507-story.html

important event in this context was in 2002 when the Bush administration prioritized water deliveries to Klamath farmers, resulting in a severe parching of the basin.[38] As a result, tens of thousands of fish in the Klamath river's lower reaches washed up dead. This had serious implications for the basin's Karuk, Hoopa, and Yurok tribes, who depend upon that salmon harvest.[39]

CAFOs in general are disproportionately sited in low-income communities and communities of color.[40] This is because these communities have been denied the political clout to successfully oppose their construction.[41] Accordingly, these communities disproportionately bear the consequences of the negative externalities of CAFOs, including general public health harms discussed in the following section, diminished quality of life,[42] and plummeting property values.[43]

ODA and DEQ have a legal duty to consider the facility's impacts on environmental justice communities. ORS 182.545(1), "Duties of Natural Resource Agencies," states: In order to provide greater public participation and to ensure that all persons affected by decisions of the natural resources agencies have a voice in those decisions, each natural resource agency shall:
(1) In making a determination whether and how to act, consider the effects of the action on environmental justice issues.
(2) Hold hearings at times and in locations that are convenient for people in communities that will be affected by the decisions stemming from those hearings.

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[38] *Id.*
[39] *Id.*
[40] *See* Jan. 12, 2017 EPA External Civil Rights Compliance Office Letter of Concern to N.C. Dep't of Envtl. Quality (describing discriminatory health and quality of life impacts from pig and poultry CAFOs), https://www.epa.gov/sites/production/files/2018-05/documents/letter_of_concern_to_william_g_ross_nc_deq_re_admin_complaint_11r-14-r4_.pdf; Kelley J. Donham et al., *Community Health and Socioeconomic Issues Surrounding Concentrated Animal Feeding Operations*, 115 ENVTL. HEALTH PERSP. 317 (2007); Wing, *supra* note 14, at 225.
[41] Miller, *supra* note 19 (citing Steve Wing & Jill Johnston, *Industrial Hog Operations in North Carolina Disproportionately Impact African-Americans, Hispanics and American Indians*, NC POLICY WATCH (2014), http://www.ncpolicywatch.com/wp-content/uploads/2014/09/UNC-Report.pdf; Wendee Nicole, *CAFOs and Environmental Justice: The Case of North Carolina*," 121 ENVIRON. HEALTH PERSPECT. 121 (2013): A182–A189, https://www.ncbi.nlm.nih.gov/pubmed/23732659).
[42] Hribar, *supra* note 30, at 7 –8 (noting odors and insect vectors that plague CAFO-occupied communities).
[43] *Id.* at 11 (noting that "property value declines can range from a decrease of 6.6% within a 3-mile radius of a CAFO to an 88% decrease within 1/10 of a mile from a CAFO").

(3) Engage in public outreach activities in the communities that will be affected by decisions of the agency.
(4) Create a citizen advocate position that is responsible for (a) Encouraging public participation; (b) Ensuring that the agency considers environmental justice issues; and (c) Informing the agency of the effect of its decisions on communities traditionally underrepresented in public processes.
DEQ and ODA are "Natural Resource Agencies" under ORS 182.535. Therefore, DEQ and ODA must be careful not to violate ORS 182.545 by issuing the Straight Ranch permit before complying with each of these requirements.

C. Public Health Impacts

Straight Ranch has serious implications for the communities surrounding its proposed location. Public health in Klamath County is already in dire condition. They are in the 2nd worst quartile of Oregon counties for deaths due to cancer.[44] They are also in the lowest quartile of Oregon counties for infant mortality rate.[45] Lastly, they are in the lowest quartile of Oregon counties for metrics related to immunizations and infectious diseases.[46]

More generally, millions of people (including Oregonians) who live in CAFO-occupied communities are forced to rely on drinking water that has been "contaminated by dangerous nitrates and coliform bacteria" from CAFOs.[47] Public water systems in such communities often have nitrate and coliform levels that exceed federal contaminant limits set by the Safe Drinking Water Act.[48]

The health impacts of drinking contaminated water are serious, particularly for those who have weakened immune systems.[49] Symptoms of illnesses caused by contaminated water include nausea, vomiting, fever, diarrhea, muscle pain, kidney failure, and death.[50] People at high risk of illness or death constitute approximately

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[44] *Healthy People 2020 Progress Tracker*, HEALTHY KLAMATH, http://www.healthyklamath.org/index.php?module=indicators&controller=index&action=dashboard&alias=hp2020 (last visited June 17, 2020).
[45] *Id.*
[46] *Id.*
[47] Miller, *supra* note 19 (citing Jackie Wang, Nicole Tyau, and Chelsea Rae Ybanez, *Farming Activity Contaminates Water Despite Best Practices*, THE CALIFORNIAN (Aug. 15, 2017), https://www.thecalifornian.com/story/news/2017/08/15/water-near-farms-often-contaminated-nitrates-coliform-bacteria/571000001/); *see supra* section III.A.2.
[48] *Id.* (citing Wang et al., *supra* note 36; *Drinking Water Contaminants—Standards and Regulations*, EPA, https://www.epa.gov/dwstandardsregulations).
[49] Hribar, *supra* note 30, at 9.
[50] *Id.* at 10.

20% of the population, and they include elders, infants, children, and those who are pregnant, on chemotherapy, or are otherwise immunosuppressed.[51]

In terms of air quality, CAFO emissions are so potent that it can be dangerous even to approach a waste lagoon—particularly in hot summer months.[52] "The oxygen-deficient, toxic, and/or explosive atmosphere which can develop in a manure pit has claimed many lives."[53] There are multiple incidents of farm workers approaching lagoons to make repairs and succumbing to the emissions; some died from hydrogen sulfide poisoning, while others asphyxiated in the oxygen-starved air.[54] Others died after collapsing during rescue attempts.[55]

But it is not necessary to be near a lagoon to suffer health effects from the emissions. Studies show that people in CAFO-occupied communities suffer disproportionate levels of tension, anger, confusion, fatigue, depression, upper respiratory, and gastrointestinal ailments than neighbors of other types of farms and non-livestock areas."[56] Ammonia is a "strong respiratory irritant" that causes chemical burns to the respiratory tract, skin, and eyes.[57] It also causes severe coughing and chronic lung disease.[58] Hydrogen sulfide is acutely dangerous, causing "inflammation of the moist membranes" in the eyes and respiratory tract as well as olfactory neuron loss, pulmonary edema, and even death.[59] Particulate matter causes "chronic bronchitis, chronic respiratory symptoms, declines in lung function, [and] organic dust toxic syndrome."[60]

In addition to pathogen-driven illnesses, CAFOs also spawn new viruses.[61] When the U.S. Centers for Disease Control and Prevention (CDC) sequenced the

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[51] *Id.* at 9.
[52] ROBBIN MARKS, CESSPOOLS OF SHAME: HOW FACTORY FARM LAGOONS AND SPRAYFIELDS THREATEN ENVIRONMENTAL AND PUBLIC HEALTH 1, 26 (July 2001), https://www.nrdc.org/sites/default/files/cesspools.pdf.
[53] *NIOSH Warns: Manure Pits Continue to Claim Lives*, CENTERS FOR DISEASE CONTROL AND PREVENTION (July 6, 1993), https://www.cdc.gov/niosh/updates/93-114.html.
[54] Marks, *supra* note 41, at 19.
[55] *See id.* at 26.
[56] Hribar, *supra* note 30, at 5; *see* Sarah C. Wilson, Comment, *Hogwash! Why Industrial Animal Agriculture is Not Beyond the Scope of Clean Air Act Regulation*, 24 PACE ENVTL. L. REV. 439, 441, 445 n.45 (2007).
[57] CAFO SUBCOMM. OF THE MICH. DEP'T OF ENVTL. QUALITY TOXICS STEERING GRP., CONCENTRATED ANIMAL FEEDLOT OPERATIONS (CAFOS) CHEMICALS ASSOCIATED WITH AIR EMISSIONS 4 (May 10, 2006)
[58] Hribar, *supra* note 30, at 6.
[59] *Id.*; CAFO Subcomm., *supra* note 46, at 4.
[60] Hribar, *supra* note 30, at 6.
[61] *Id.* at 10.

DNA of the swine flu that killed thousands of Americans in 2009, they traced its origin to a single North Carolina pig CAFO.[62] The CDC estimates that the 2009 swine flu pandemic sickened 60.8 million Americans, hospitalized 274,304, and killed 12,469, including more than a thousand children.[63] Similarly, both the novel coronavirus and SARS may have originated in animal markets, with the full consequences of the novel coronavirus yet to be seen.[64]

D. Animal Welfare Consequences

Straight Ranch's operation, as can be clearly seen from the aerial photographs and descriptions in their AWMP, poses serious risks to the heifers' welfare. First, the animals will be confined to feedlots during the winter months. They will spend these months wading in their own manure, unable to graze according to their natural instincts, and eating only the processed feed that is provided to them. They will also be denied any shade or shelter year-round, exposed to the harsh elements in the Klamath Basin. This includes 300 days of sun exposure, reaching up to 100°F, and cold snowy winters, dropping down to -25.0°F.[65]

CAFOs in general force animals to live in conditions that betray Oregonian values. They maximize profits by treating animals not as sentient creatures, but as production units. Oregon's recent experience with Lost Valley Farm underscores the severe risks to animal welfare that CAFOs present.[66]

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[62] Gavin J. D. Smith, et al., *Origins and Evolutionary Genomics of the 2009 Swine-origin H1N1 Influenza of Epidemic*, 459 NATURE 1122 (2009); Bernice Wuethrich, *Chasing the Fickle Swine Flu*, 299 SCIENCE 1502 (2003).

[63] Sundar S. Shrestha et al., *Estimating the Burden of 2009 Pandemic Influenza of (H1N1) in the United States (April 2009–April 2010)*, 52 CLINICAL INFECTIOUS DISEASES S75–82 (2011).

[64] Aylin Woodward, *Both the new coronavirus and SARS outbreaks likely started in Chinese wet markets,* BUSINESS INSIDER (Feb. 26, 2020), https://www.businessinsider.com/wuhan-coronavirus-chinese-wet-market-photos-2020-1 (discussing the potential for zoonotic diseases to jump from animals to humans).

[65] *Klamath Falls, Oregon*, WEATHER BASE, https://www.weatherbase.com/weather/weather-summary.php3?s=598527&cityname=Klamath+Falls,+Oregon,+United+States+of+America#:~:text=The%20highest%20recorded%20temperature%20in,which%20was%20recorded%20in%20January (last visited June 17, 2020).

[66] Lost Valley Farm, for example, confined cows to barns overflowing with manure. *See* Leah Douglas, *Lost Valley debacle leads to effort to limit mega-dairies in Oregon*, OREGON LIVE (Apr. 5, 2019), https://www.oregonlive.com/business/2019/04/lost-valley-debacle-leads-to-effort-to-limit-mega-dairies-in-oregon.html (featuring a photo of a dairy cow forced to stand in manure up to her ankles).

E. Further Disadvantages for Family Farms

Lastly, the rise of CAFOs across the state is driving family farms—historically the backbone of Oregon's rural economy—to extinction. The "catastrophic decline"[67] in small and mid-sized dairy farms is largely attributable to CAFOs: as dairy CAFOs have become more prevalent in Oregon, the total number of dairy farms has plummeted from 1,900 in 1992 to approximately 230 today.[68] In sum, Oregon's smaller family farms cannot—and will not—survive any new or expanded CAFOs.

V. CONCLUSION

For the foregoing reasons—and to prevent another debacle like Lost Valley Farm—the Agencies should deny the Application and institute a moratorium on new mega-dairy CAFOs in Oregon.

Sincerely,

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[67] George Plaven, *Groups call for "mega-dairy" moratorium*, CAPITAL PRESS (Dec. 13, 2018) https://www.capitalpress.com/ag_sectors/dairy/groups-call-for-mega-dairy-moratorium/article_a7a01e2a-fcb5-11e8-bc5c-1f802a55fc28.html.

[68] Douglas, *supra* note 67.

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