

1 CHARLES M. TEBBUTT, WSBA #47255
Law Offices of Charles M. Tebbutt, P.C.
2 941 Lawrence St.
Eugene, OR 97401
3 Tel. 541.344.3505

4 BRAD J. MOORE, WSBA #21802
Stritmatter Kessler Whelan
5 200 Second Avenue West
Seattle, WA 98119
6 Tel. 206.448.1777

7 IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF WASHINGTON

8 COMMUNITY ASSOCIATION FOR
9 RESTORATION OF THE
ENVIRONMENT, INC., a Washington
10 Non-Profit Corporation

and

11 CENTER FOR FOOD SAFETY, INC.,
a Washington, D.C. Non-Profit
12 Corporation,

Plaintiffs,

13 v.

14 COW PALACE, LLC, a Washington
Limited Liability Company, THE
15 DOLSEN COMPANIES, a Washington
Corporation, and THREE D
16 PROPERTIES, LLC, a Washington
Limited Liability Company,

17 Defendants.

18 -----
19 COMMUNITY ASSOCIATION
FOR RESTORATION OF THE
ENVIRONMENT, INC., a
20 Washington Non-Profit Corporation
and

NO. 13-CV-3016-TOR
NO. 13-CV-3017-TOR
NO. 13-CV-3019-TOR

DECLARATION OF DR.
MICHAEL RUSSELLE IN
SUPPORT OF PLAINTIFFS'
MOTION FOR AWARD OF
ATTORNEY AND EXPERT
WITNESS FEES AND COSTS

1 CENTER FOR FOOD SAFETY,
2 INC., a Washington D.C. Non-Profit
3 Corporation,

4 Plaintiffs,

5 v.

6 GEORGE & MARGARET, LLC, a
7 Washington Limited Liability
8 Company, GEORGE DeRUYTER &
9 SON DAIRY, LLC, a Washington
10 Limited Liability Company, and
11 D&A DAIRY and D&A DAIRY
12 LLC, a Washington Limited Liability
13 Company,

14 Defendants.

15 COMMUNITY ASSOCIATION FOR
16 RESTORATION OF THE
17 ENVIRONMENT, INC., a Washington
18 Non-Profit Corporation

19 *and*

20 CENTER FOR FOOD SAFETY, INC., a
Washington, D.C. Non-Profit
Corporation,

Plaintiffs,

v.

HENRY BOSMA DAIRY, a
Washington Proprietorship, aka HANK
BOSMA DAIRY, aka BOSMA DAIRY,
LIBERTY DAIRY, LLC, a Washington
Limited Liability Company, ARIZONA
ACRES LIMITED PARTNERSHIP, a
Washington limited partnership,
LIBERTY ACRES, LLC, a Washington
Limited Liability Company, and MR.
HENRY BOSMA, an individual,

Defendants.

1 I, Dr. Michael Russelle, hereby declare as follows:

2 1. I am over the age of eighteen and competent to make this declaration. I
3 make this declaration in support of Plaintiffs' Motion for Award of Attorneys and
4 Expert Witness Fees and Costs.

5 2. I received my B.S. in Agronomy from Oregon State University in 1976, and
6 in 1978, received an MS in Crop Science from that same University. I received a
7 Ph.D in Agronomy from the University of Nebraska in 1982.

8 3. I have not been involved or consulted in this litigation in any way before the
9 Consent Decrees were signed and entered by the Court. I am offering the
10 following opinions voluntarily, without any fee. A list of citations is contained at
11 the end of this declaration.

12 4. I retired in January 2015 after more than 32 years as a Research Soil
13 Scientist with the USDA-Agricultural Research Service. I worked in the Plant
14 Science Research Unit in St. Paul, MN, was affiliated with the US Dairy Forage
15 Research Center in Madison, WI, and am an Adjunct Professor in the Dept. of Soil,
16 Water, and Climate at the University of Minnesota. Before joining ARS in 1982, I
17 worked for four years to optimize nitrogen fertilizer management on irrigated corn
18 for my Ph.D. research in Nebraska.

19 5. With the finding that dairy manure can be considered a solid waste under the
20 Resource Conservation and Recovery Act (RCRA) of 1976, the US District Court

1 for the Eastern District of Washington (*Community Association for Restoration of*
2 *the Environment (CARE) v. Cow Palace, LLC*, No. 13-CV-3016-TOR (E.D. Wash
3 1/14/15)) set a clear precedent that other regulatory bodies should follow, in my
4 professional opinion. I have conducted research for over 36 years to help farmers
5 and their advisors understand how to manage sources of nitrogen on farms, but the
6 problems with poor manure management, in particular, continue to grow.

7 6. My research has focused on nitrogen cycling in agricultural systems,
8 particularly on dairy farms, with the goal of minimizing nitrogen losses to water
9 and the atmosphere, and maximizing its use as a crop nutrient. This has required an
10 understanding of nitrogen transformations and cycling in soil, water, livestock,
11 manure, and the atmosphere, effects of feed composition, soil conditions, weather,
12 crop species, management of soil, crops, nutrient application, and water supply,
13 and practical logistics on the farm. Because phosphorus similarly is both critical
14 for crop and livestock growth and can be a significant environmental contaminant,
15 I also worked on its management. Much of my work involved transferring research
16 results to farmers, farm advisors, state and federal personnel, and the public.

17 7. When well managed, dairy cattle produce more food protein per unit feed
18 protein than fish, laying hens, chicken, swine, or beef cattle (Smil, 2002). Most
19 nitrogen in feed is contained in protein. After utilizing feed nitrogen for milk, the
20 growing calf, and small amounts needed by the cow herself, dairy cattle then

1 excrete most of the remaining feed nitrogen (roughly 60% of their dietary nitrogen)
2 as urine and dung (collectively with bedding material called manure).

3 8. The problem of manure mismanagement and disposal is widespread but is
4 not typical of all operations. In answers to surveys, many farmers self-reported that
5 they follow best management practices and nutrient management guidelines from
6 the Extension Service or Land Grant Universities. In the same surveys, however,
7 many others have reported rates of fertilizer and manure applications that greatly
8 exceed the guidelines. For example, more than 70% of surveyed dairy operators in
9 Minnesota reported applying manure and fertilizer to corn at rates that exceeded
10 the recommended rate by at least 30 and up to 260 pounds of N per acre (Yost et
11 al., 2014).

12 9. This problem is not new. A century ago, two professors at the Iowa State
13 College wrote, “Manure is considered a waste product on the average farm and
14 very often care is not taken that it be stored properly and losses of valuable
15 portions be prevented.” (Stevenson and Brown, 1918, p.12). The number of
16 publications on Google Scholar including terms “waste disposal” and “dairy,” and
17 excluding references to wastes other than manure, rose from about 20 in the 1920s
18 to over 1000 in the 1980s, and to more than 7000 in 2001 to 2010. The use of
19 “waste” to refer to manure and the mindset of “disposal” indicate the prevalence of
20 this concerning mindset among authors. In contrast, a similar search with “manure

1 utilization” replacing “waste disposal” yielded none before 1964 and fewer than
2 300 in 2001-2010, only 4% as many as those using “waste disposal.”

3 10. There now are excellent on-line manure management planners available and
4 private and public farm advisory services that can help farm operators determine
5 how to optimize nutrient utilization from manure. Scientists and Extension
6 specialists have called for more work with dairy farmers to reduce purchased
7 fertilizer input in proportion to the nutrient supply by manure and by terminated
8 annual and perennial forage stands in crop rotations (Cela et al., 2014; Powell and
9 Rotz, 2015). Despite these advances, University faculty in the US felt that
10 regulation was the primary reason that producers managed manure better (Schmitt
11 et al., 1999).

12 11. Over the past 20 years, dairy farm numbers declined by nearly 60%
13 (MacDonald and Newton, 2014), driven largely by the prevailing economics of
14 dairy farming. Although many smaller dairy farms are profitable, especially when
15 producing for niche markets, the average costs of production per hundredweight
16 (cwt) of milk produced are higher for smaller herds (\$39.11/cwt for herds < 49
17 cows) than for larger herds (\$13.80/cwt for herds >1,999 cows), and operations
18 with large herds are more often profitable (MacDonald and Newton, 2014).

19 12. But many dairy farms also have specialized in the livestock enterprise, and
20 reduced the amount of land they farm. As a result, dairy cows are now

1 concentrated on fewer farms with smaller land base per cow. For example, on
2 farms with herds of 200 to 699 cows averaged 2.5 acres per cow, whereas herds of
3 1000 cows or more averaged 5.4 cows per acre (0.18 acre per cow) in 2005
4 (MacDonald et al., 2007). Stocking rate in two important dairy regions showed that
5 half of the dairy farms in Wisconsin had more than 5 acres per lactating cow in
6 2002, whereas half the farms in the Central Valley of California had more than 3.2
7 cows per acre (Powell et al., 2010). These large, land-poor operations must have
8 agreements in place with neighbors to utilize the manure at agronomic (i.e.,
9 beneficial) rates. The same trends have occurred in poultry, swine, and beef cattle
10 production.

11 13. Due to greater size of operations, increasing livestock-to-land area ratios,
12 limitations in labor or equipment, and adverse weather and soil conditions, farmers
13 often are faced with difficult management decisions. Manure handling, storage,
14 and application also cost money. The decision in *CARE v. Cow Palace* makes it
15 clear that dairy farm operators, and other livestock and poultry producers, can be
16 held liable for their manure, regardless of the size of the operation. This should
17 motivate these producers to overcome the difficulties involved in proper manure
18 handling, storage, and application that have prevented them from conserving and
19 utilizing this beneficial material. Furthermore, it should encourage the use of
20

1 terminology that eventually transforms the prevailing attitude about manure being
2 a “waste” to be “disposed.”

3 14. Achieving beneficial use of manure nutrients is easiest with an adequate
4 cropland area, whether crop production is an integral part of the dairy farm, or
5 whether they are separate operations that trade feed and manure (Russelle et al.,
6 2007). Although it is only one of the concerns for long-term sustainability raised
7 by the concentration of animals (Rosenstock et al., 2014), exceeding the carrying
8 capacity of the land for manure nutrients clearly increases the risk of
9 environmental degradation, and changes how manure is viewed by the courts. For
10 example, significant nitrogen contamination of groundwater has occurred under
11 dairy cow loafing areas even in areas where annual rainfall is too low to cause
12 nitrate leaching by itself (Harter et al., 2014). The Wisconsin Supreme Court
13 (*Wilson Mutual Insurance Co. v. Falk*, 2014 WI 136 (Wis. 2014)) recently held
14 that manure meets the definition of a pollutant when it contaminates drinking
15 water. *CARE v. Cow Palace* goes further in holding that leaching of manure
16 contaminants into the environment can present “an imminent and substantial
17 endangerment” under RCRA.

18 15. The settlement reached in the *CARE v. Cow Palace* case provides crucial
19 manure management limitations. I am not familiar with this particular facility or
20 two others in the Yakima Valley that are involved in similar settlements. However,

1 given the findings of the Court, the elements of the settlement concerning lagoon
2 lining, adjustments of future nitrogen and phosphorus applications based on
3 appropriate soil sampling for the region, changes in composting operations, and
4 use of impermeable surfaces with runoff collection for animals and ensiled feed
5 provide the kind of site specific limitations that all facilities with such similar
6 pollution problems should adopt.

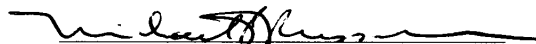
7 16. I have spent a great deal of my career researching issues of manure
8 management in the dairy sector and have published numerous articles and
9 presented dozens of invited talks on this subject. In my years working for USDA, I
10 often made recommendations for changes in practices and guidelines to achieve
11 better economic return from manure nutrients and to better protect the environment
12 from poor manure management. Those recommendations have not been generally
13 well accepted due, I think, to the additional direct and indirect costs entailed, and, I
14 speculate, to the reluctance of regulators and non-regulatory agricultural advisory
15 groups to be perceived by dairy operators as unduly interfering with farm
16 operations. The findings of the *CARE v. Cow Palace* case emphasize the need for
17 clear communication with farm operators by all advisors about prudent manure
18 storage and application to minimize risk of undesirable outcomes.

19 17. The requirements in the settlement agreement in this case provide
20 dramatically more protective elements of improved manure management that I

1 believe will significantly reduce continued nitrogen and phosphorus loadings to the
2 environment. Although some aspects of these standards have been required by
3 local jurisdictions, I know of no other place in the United States that has required
4 dairies to adhere to this suite. While even these standards may not prevent
5 continuing contributions of nitrate to groundwater due to the legacy of nitrogen
6 accumulation in the soil and conditions at a particular location, they are the type of
7 manure management practices that are critical to providing a more sustainable
8 dairy industry. I recommend that regulatory agencies adopt and that dairy operators
9 follow these types of standards where similar problems with dairies are
10 encountered or can be reasonably anticipated.

11
12 I HEREBY DECLARE UNDER PENALTY OF PERJURY THAT THE
13 FOREGOING IS TRUE AND CORRECT TO THE BEST OF MY
14 KNOWLEDGE.

15
16 Dated this 8th Day of July, 2015, in St. Paul, Minnesota.

17
18 

19 Dr. Michael Russelle
20

CITATIONS

1
2 Cela, S., Q.M. Ketterings, K. Czymmek, M. Soberon, and C. Rasmussen. 2014.
3 Characterization of nitrogen, phosphorus, and potassium mass balances of dairy
farms in New York State. *Journal of Dairy Science* 97: 7614–7632.

4 Harter, T., G. Kourakos, and K. Lockhart. 2014. Assessing potential impacts of
5 livestock management on groundwater. NI R 14-03 Supplemental Paper 2.
Durham, NC: Duke University.

6 MacDonald, J.M., E.J. O’Donoghue, W.D. McBride, R.F. Nehring, C.L. Sandretto,
7 and R. Mosheim. 2007. Profits, costs, and the changing structure of dairy farming.
ERR-47, U. S. Department of Agriculture, Economic Research Service,
8 Washington, D.C.

9 MacDonald, J., and D. Newton. 2014. Milk production continues shifting to large-
10 scale farms. *Amber-Waves*. December 2014, U. S. Department of Agriculture,
Economic Research Service.

11 Powell, J.M., M.P. Russelle, and N.P. Martin. 2010. The United States: Trends in
12 the dairy industry and their implications for producers and the environment. pp.
115-139, In: P. Gerber et al., eds. *Livestock in a Changing Landscape: Regional
13 insights*. United Nations Food and Agricultural Organization, Island Press,
Washington, D.C.

14 Powell, J.M., and C.A. Rotz. 2015. Measures of nitrogen use efficiency and
15 nitrogen loss from dairy production systems. *Journal of Environmental Quality*.
44:336-344.

16 Rosenstock, T.S., D. Liptzin, K. Dzurella, A. Fryjoff-Hung, A. Hollander, V.
17 Jensen, A. King, G. Kourakos, A. McNally, G.S. Pettygrove, J. Quinn, J.H. Viers,
T.P. Tomich, and T. Harter. 2014. Agriculture’s contribution to nitrate
18 contamination of Californian groundwater (1945-2005). *Journal of Environmental
Quality*. 895-907.

19 Russelle, M.P., M.H. Entz, and A.J. Franzluebbbers. 2007. Reconsidering integrated
20 crop-livestock systems in North America. *Agronomy Journal*. 99: 325-334.

1 Schmitt, M.A., M.P. Russelle, G.W. Randall, and J.A. Lory. 1999. Manure
nitrogen crediting and management in the USA: Survey of University faculty.
2 Journal of Production Agriculture. 12:419-422.

3 Smil, V. 2002. Nitrogen and food production: Proteins for human diets. AMBIO.
31:126-131.

4 Stevenson, W.H., and P.E. Brown. 1918. Soil Surveys, Field Experiments and Soil
5 Management in Iowa. Iowa Agricultural Experiment Station Circulars. Paper 44.
http://lib.dr.iastate.edu/iaes_circulars/44

6 Yost, M.A., J.A. Coulter, M.P. Russelle, and M.A. Davenport. 2014. Opportunities
7 exist to improve alfalfa and manure nitrogen crediting in corn following alfalfa.
Agronomy Journal 106:2098-2106.
8

9

10

11

12

13

14

15

16

17

18

19

20

CERTIFICATE OF SERVICE

I hereby certify that on August 14, 2015 I filed a true and correct copy of the foregoing document with the Clerk of Court using the CM/ECF system, which will automatically generate service to the following:

Debora K. Kristensen
Jeffrey C. Fereday
Preston N. Carter
Givens Pursley LLP
601 W. Bannock St.
Boise, ID 83702
dkk@givenspursley.com
jefffereday@givenspursley.com
prestoncarter@givenspursley.com

Brendan V. Monahan
Sean A. Russel
Stokes Lawrence
120 N. Naches Avenue
Yakima, WA 98901
bvm@stokeslaw.com
sean.russel@stokeslaw.com

Ralph H. Palumbo
Summit Law Group
315 Fifth Avenue S., Suite 1000
Seattle, WA 98104
ralphp@summitlaw.com

Mathew L. Harrington
Olivia Gonzalez
Stokes Lawrence
1420 Fifth Avenue
Seattle, WA 98101
MLH@stokeslaw.com
olivia.gonzalez@stokeslaw.com

C. Tom Arkoosh
Arkoosh Law Offices
802 W. Bannock St., Ste. 900
P.O. Box 2900
Boise, ID 83701
tom.arkoosh@arkoosh.com

/s/ Sarah A. Matsumoto
Sarah A. Matsumoto
Law Offices of Charles M. Tebbutt, P.C.