

Estimates of Emissions from Dairy Cows

Friends of Toppenish Creek, February 28, 2025

From Environmental Protection Agency Models for Washington State available at [State Inventory and Projection Tool | US EPA](#)

Methane

Manure Management 43,041,000,000 g/year for 275,000 cows = 428.80 g/day/cow

Enteric Fermentation 150.9 kg/cow per year = 410.96 g/day/cow

Total Methane 839.76 g/cow/day

From *Emissions Data from Two Dairy Freestall Barns in Washington* – National Air Emissions Monitoring Study available at [ASAE Journal | US EPA ARCHIVE DOCUMENT](#)

Ammonia

Barn 2: 56.5 g/day/cow

Barn 4: 56.5 g/day/cow

56.5 g/day/cow average

Hydrogen Sulfide

Barn 2: 1.08 g/day/cow

Barn 4: 1.15 g/d/cow

1.12 g/day/cow average

Volatile Organic Compounds

Barn 2: 86.67 g/day/cow

Barn 4: 145.71 g/day/cow

116.19 g/day/cow average

PM 2.5

Barn 2: 5.25 g/day/cow

Barn 4: 1.90 g/day/cow

3.58 g/day/cow average

PM 10

Barn 2: 6.94 g/day/cow

Barn 4: 10.0 g/day/cow

8.47 g/day/cow average

Estimated emissions from dairy cows in grams/cow/day

Pollutant	Grams/cow/day
Methane (Manure Management + Enteric)	839.76
Ammonia	56.5
Hydrogen Sulfide	1.12
Volatile Organic Compounds	116.19
PM 2.5 (Fine Particulate)	3.58
PM 10 (Coarse Particulate)	8.47

Estimated Emissions from 100,000 milk cows in Yakima County in Metric Tons and Tons Per Year based on NAEMS data and EPA models.

Pollutants		Metric tons	Tons
Methane		30,651	33,716
Ammonia		2,062	2,270
Hydrogen Sulfide		41	45
VOCs		4,241	4,665
PM 2.5		131	144
PM 10		309	340