



August 9, 2013 – Dräger 2000 Oxygen and Hydrogen Sulfide air meter registers 19.1 % O₂ and 1.0 ppm H₂S (1 ppm = 1,000 ppb) at property next to Hartland Farms liquid manure spray-application in Hudson Twp, Lenawee Co., Michigan.

New air meter finds high levels of H₂S near liquid manure application field

On August 9, 2013, a piercing alarm went off. It was ECCSCM's hand-held Oxygen/Hydrogen Sulfide air meter, an air alert next to a field where Hartland Farms CAFO was spraying liquid manure.

ECCSCM recently purchased the Dräger 2000 air meter to measure levels of one dangerous air pollutant (of many) from animal waste – Hydrogen Sulfide (H₂S). Neighbors have suffered and complained to agencies for years about the emissions from CAFOs and their field applications of liquid manure. Now we can show emission numbers.

Hartland Farms had been draglining liquid manure, spraying so much it ponded in numerous places. Neighbors reported intense stench, affecting elderly residents as well as young children.

1 ppm = 1,000 ppb

On a neighbor's property adjacent to the manure application, the Dräger meter registered an H₂S level of 1.0 parts per million (ppm), the equivalent of 1,000 parts per billion (ppb). Thirty-two states have air standards for H₂S as measured in ppb. Michigan has no air standard for the pollutant.

New Mexico, New York, and Kentucky, for instance, have 1-hr air standards of 10 ppb. The 1,000 ppb level of H₂S as recorded at the Hartland Farms manure application site is **100 times that level**.

Risks of H₂S

Hydrogen Sulfide is a powerful neurotoxin and can be deadly. At lower levels H₂S has a foul odor, like rotten eggs, and causes irritation of the eyes, throat, and respiratory tract. Short term symptoms of include headaches, shortness of breath and nausea. Long term exposure can lead to memory loss, loss of balance, and permanent brain damage.

At high levels people lose all sense of smell and loss of consciousness can occur quickly. At extreme high levels of H₂S – levels found in manure pit enclosures, for instance – loss of consciousness and death can occur within minutes.

DEQ Pilot Study – 2006

Hydrogen sulfide is not a new concern. In 2006, the Department of Environmental Quality – responding to neighbors' complaints about foul air from CAFOs and health complaints – began a Pilot Study in our area measuring Ammonia and H₂S levels with a Jerome air meter (see details in sidebar on the left). A collaborative effort with the Michigan Department of Agriculture and the Department of Community Health, DEQ tested air quality near CAFO facilities and manure application fields once a week for 10 weeks, August 2006 to January 2007.

No action was taken on the study. Now the Department of Agriculture has charge of air and odor concerns from livestock operations. No measurements of H₂S have been taken since 2007.

Trespass: by animal waste and by H₂S



August 9, 2013 – in the same area where H₂S emissions were high, Hartland Farms liquid manure was applied so heavily that it ponded in the field, a violation of the CAFO's permit. Animal waste also was sprayed onto a neighbor's property, marked by the survey post.

from DEQ Pilot Study Data Report

Air Study in Lenawee & Hillsdale Counties, 2006-2007

- Highest recorded H₂S reading:
0.110 ppm (110 ppb) at Bakerlads CAFO, 11-1-06
"slight silage odor"
- Second highest reading, same day:
0.050 ppm (50 ppb) at Vreba-Hoff #1, 11-1-06
"strong odors, burning eyes, nauseous"

Odor can be strong but H₂S levels fairly low; odor can be "slight," as at Bakerlads, but H₂S levels high

CAFOs monitored weekly, Aug 2006 - Jan 2007:
Bleich Dairy, Vreba-Hoff #1, Vreba-Hoff #2, Mericam Dairy, Hartland Farms, Bakerlads Dairy, Bruisma Dairy, State Line Farms, Bill White Farm

Hydrogen Sulfide Standards

32 states have Air Standards for Hydrogen Sulfide – Michigan has NO STANDARD

13 states have 1-hr air standards for H₂S, ranging from 0.010 - 0.2 ppm (10 - 200 ppb)

Most people can smell H₂S at .0047 ppm (4.7 ppb)

MilkSource to buy 3 V-H CAFOs?

MilkSource, a mega-CAFO in Wisconsin, won't start out clean here – if they come. Google Earth satellite images taken June 3, 2013, show many lagoons at the closed SMD/Vreba-Hoff facilities as foul as ever.

(see story & photos on p.2)

MilkSource on track to buy three ex-Vreba-Hoff CAFOs

MilkSource LLC, a massive CAFO operation which owns 5 dairy CAFOs with 26,400 cows in Wisconsin, is apparently on the verge of buying the 3 Southern Michigan Dairies/Vreba-Hoff facilities near Hudson.

In addition to 5 dairy CAFOs, the MilkSource conglomerate in Wisconsin also includes a 9,000 calf operation, plus 20,000 heifers at their CAFO feedlot in Kansas. MilkSource's **Rosendale CAFO has 8,400 cows**. The largest Vreba-Hoff CAFO had 3,000 cows, and remember the hundreds of violations from that operation!

Wisconsin required the Rosendale CAFO to do **monthly groundwater monitoring**.

Will DEQ require groundwater monitoring wells here? Monthly monitoring? If not, why not?

Not a pretty picture

Shut down for 2 years, the SMD/Vreba-Hoff facilities are not in great condition. Google Earth satellite imagery from this summer, June 3, 2013, shows many lagoons not nearly empty, and stormwater lagoons green with algal blooms.



SMD/Vreba-Hoff Facility #1 on Dillon Hwy – Google Earth image taken June 3, 2013, shows manure lagoons and greenish stormwater lagoons.



SMD/Vreba-Hoff Facility #2 on US-127 – Google Earth image taken June 3, 2013, shows manure lagoons nowhere near empty and gray-green stormwater lagoon, lower left. The small lagoon beside the nearest barn is bright green with algae.

What lies ahead? MUCH, MUCH more of the same crap . . .

from Family Farm Defenders (Wisconsin) website, July 26, 2011 -- [ECCSCM boldface]

“Many CAFOs around the country have been cited or fined for violating their water discharge permits. This includes MilkSource, in the case of their Rosendale and Tidy View CAFOs, with manure-spreading violations...”

MilkSource was cited in Rosendale for spreading too close to a private well and again at Tidy View by spreading on a field not included in the Nutrient Management Plan or approved by the DNR...

In a letter to the DNR, neighbors of the Rosendale CAFO describe what has happened to their community since the factory farm moved in.

*“We who live near the dairy or in areas surrounding spreading fields are experiencing health problems and wrongful loss of outdoor celebrations. **Neighbors are suffering from migraines, asthma, pounding headaches, and chronic stress.** When spreading occurs near neighboring gardens, some have taken to wearing a respiratory face mask for weeks in order to work in their own gardens. **Hydrogen sulfide and ammonia are toxic emissions that now invade our breathing space.** There has been absolutely no action from Rosendale Dairy in response to citizen complaints. We have simply been told it's not going to get any better.”*

Baseline testing of streams before any CAFO cows arrive

Two impaired streams flowing from ex-Vreba-Hoff CAFOs are being tested for baseline water quality by ECCSCM and DEQ this summer.

Results coming in the next newsletter.

*ECCSCM Meetings - 3rd Wednesday of the month, 7:30 p.m. Hudson Community Center
(check our website for last-minute changes)*

JOIN US: Yes, I want to help protect our water and air, and promote sustainable agriculture. **All contributions support monitoring projects and community education.**

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Or, mail check to: ECCSCM, P.O. Box 254, Hudson, MI 49247

Thank You!

We Support Sustainable Agriculture

- that preserves and protects our air, streams and lakes
- that raises animals in a healthy, natural environment, grazing, absorbing sunshine
- that avoids the steady diet of hormones and antibiotics given animals in the crowded, confined conditions of industrial facilities
- that values and protects farmland, the environment and the rural community