November 15, 2019

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Dear Ms. Edmondson,

Thank you for taking the time to talk with the Friends of Toppenish Creek on October 25, 2019. The subject was air pollution and public health in the Lower Yakima Valley (LYV). We take this opportunity to request follow-up from your office.

As we all know, 1,800 milk cows died during a snowstorm in February of 2019. To our knowledge neither the state nor the county declared a state of emergency. However, Governor Inslee allocated $100,000 from emergency funds for the management of these animal mortalities. About 800 carcasses were shipped to a landfill in Oregon. Local rendering plants and landfills were unable to meet the demand and about 950 carcasses were composted on two LYV dairies. This equates to about 9,500 human corpses covered with composting material and allowed to decompose (rot) near family homes and small towns.

The Friends of Toppenish Creek have unsuccessfully sought reassurances from local and state officials. It now appears to us that there is:

1. No air monitoring
2. No water monitoring
3. No soil monitoring
4. No monitoring for pathogens, endotoxins or other health hazards
5. No monitoring for adverse impacts on public health.

This is unconscionable. Local and state officials are in a state of denial. They sniffed the air and it didn't smell too bad. They stomped on the ground and it seemed pretty hard.

They apparently concluded that this was good enough – good enough at least for the people of the LYV who are "lucky to have jobs" (quote from a local priest, November, 2019)

The people of the LYV are being treated worse than guinea pigs. At least the impacts on lab animals are used for research and beneficial purposes. In the LYV we have a living lab where human beings are exposed to pollutants and pathogens and no one is gathering data.

We ask you to pass this information along to decision makers within the Environmental Protection Agency and ask whether they can use their oversight powers to compel more protective and appropriate actions by Yakima County and WA State officials. The minimum the agencies should do at this time is:

1. Monitor domestic wells down current for bacterial contamination
2. Within the next six months have a written policy regarding how such mortalities should be dealt with in the future including ways of monitoring for health hazards for the neighbors.

Sincerely,

Jean Mendoza

Jean Mendoza

Executive Director – Friends of Toppenish Creek

3142 Signal Peak Road
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cc.
WA State Dept. of Ecology
WA State Environmental Justice Task Force
Yakima Herald Republic
Yakima County Commission
WA Governor's Interagency Council on Health Disparities

Failure of Government

Washington law prescribes a process for addressing public emergencies, including natural disasters, including winter storms.

These laws mandate an initial response from county offices of emergency management.

In the event that county offices of emergency management are overwhelmed by the size of the emergency there are provisions for requesting assistance from Washington State.

In February 2019 about 1,800 milk cows in the Lower Yakima Valley (LYV) died in a winter storm. This meets criteria for a public emergency – how to dispose of a large number of animal mortalities in a way that protects public health and the environment.

Yakima County did not declare an emergency; did not activate the emergency management process as prescribed by local and state regulations. There was no official county request for state assistance since there was no declaration of emergency. This bypassed requirements to address public health and recovery.

According to the WA State Dept. of Ecology the dairies did not request government assistance with disposal until 48 hours after the event.

Washington laws require the owners of dead animals to dispose of them within 72 hours of death.

When local agencies did not act Governor Inslee allocated $100,000 from state emergency funds to assist with mortality management. This allocation bypassed the legal requirements in place for emergency expenditures.

The WA State Dept. of Ecology, WA State Dept. of Agriculture and the Yakima Health District worked together to monitor composting of 950 dead cows on two dairies. The Yakima Regional Clean Air Agency was involved in the early stages of oversight.

950 animal carcasses were composted in an area that the Natural Resource Conservation Service lists as "poor" and "very limited" for composting mortalities. The agencies know this or should know this.

There is no monitoring of adverse health events or harm to the environment from this composting. Specifically:

- **There has been no air monitoring for air pollutants of any kind including pathogens and allergens.**
- **There are no plans for air monitoring when the compost is turned.**
- **There has been no groundwater monitoring in spite of the fact that the aquifer in this regions is already severely contaminated.**
- **Neighbors were not informed about the composting. Neighbors were not advised to look for or report adverse health impacts.**
- **There have been no health surveys.**
- **There are no plans for deep soil monitoring beneath the compost sites to assess leaching to the aquifer.**

A brief literature search finds studies that list significant health and environmental risks from improper composting of animal mortalities.

Failure of Government with Support Documentation

Washington law prescribes a process for addressing public emergencies, including natural disasters, including winter storms. (Chapter 38.52 RCW Emergency Management.)

These laws mandate an initial response from county offices of emergency management.

According to the Yakima County Comprehensive Emergency Management Plan, Section 2.5.1, page 16:

> *A Proclamation of Emergency is the legal method which authorizes extraordinary measures to solve disaster problems. A proclamation allows for the emergency use of resources, by-passing hearings and the competitive bid process, and activates extraordinary measures as outlined in this plan and RCW 38.52.070, RCW 35.33.081 for cities/towns, and RCW 36.40.180 for the county. It is a prerequisite for county and/or state assistance.*

And Yakima Emergency Support Function #11 on page 1:

> *Purpose 1.1. Emergency Support Function #11 – Agriculture and Natural Recourses, identifies, coordinates and secures the effort to provide nutritional resources necessary to support an emergency response or recovery effort or other disaster assistance initiative; control and eradication of an outbreak of a highly contagious or economically devastating animal/zoonotic disease, highly infective exotic plant disease; assurance of food safety and food security (under USDA jurisdictions and authorities); protect natural and cultural resources and historic properties resources (NCH); provide for the safety and well-being of household pets and farm animals during an emergency response or evacuation situation; and provide disposal management assistance during large-scale animal mortality events.*

In the event that county offices of emergency management are overwhelmed by the size of the emergency there are provisions for requesting assistance from Washington State.

The WA State Emergency Support Function #11 Appendix 2 states on page 3:

> *A natural or technological disaster could result in mass animal casualties. A large number of unattended animal carcasses could have a negative impact on public health and the environment. Local authorities are responsible for the removal of animal*

carcasses. However, if a local government is overwhelmed, has depleted or anticipates depleting its resources, it may request assistance through the State Emergency Operations Center (SEOC). The SEOC Operation Section will designate state agencies to assist with the removal of animal carcasses.

In February 2019 about 1,800 milk cows in the Lower Yakima Valley (LYV) died in a winter storm. This meets criteria for a public emergency – how to dispose of a large number of animal mortalities in a way that protects public health and the environment.

Yakima County did not declare an emergency; did not activate the emergency management process as prescribed by local and state regulations. There was no county request for state assistance since there was no declaration of emergency. This bypassed requirements to address public health and recovery.

Yakima Emergency Support Function 11 states:

4.6. Whole Community Involvement

4.7.1. A successful Whole Community agricultural and natural resources program assesses local assets and capabilities, bolsters identified weaknesses, and supports locally-driven solutions. This includes, but is not limited to, inclusive disaster planning, supporting local response organizations and processes, developing partnerships with supportive groups and agencies, and ensuring a place at the table for government, residents, NGOs, businesses, churches, advocacy organizations, and other stakeholders.

4.7.2. ESF #11 recognizes that inclusion and accessibility is about more than language translation. Inclusion and accessibility mean a concerted effort to engage populations with limited English proficiency (LEP), disabilities, or other conditions that limit access to recovery services, and to promote effective resource accessibility – that is, that no impacted individuals face a unique burden in securing resources for which they qualify, and that are available to others.

4.7.3. The Whole Community includes populations with individuals with disabilities and Access and Functional Needs (AFN). Any agency or organization that receives federal funding is required to have a plan or policy for addressing the needs of individuals with Limited English Proficiency (LEP), pursuant to Title VI, the Civil Rights Act. The Washington State Emergency Management Division and this ESF expects all agencies and organizations to comply with federal law. For more information on how each agency or organization complies with federal law, please contact the individual agency or organization.

Yakima Emergency Support Function 11 states:

7. Information Collection, Analysis, & Dissemination

7.1. ESF #11 coordinates with Response and Recovery Core Capability Leads, and other county and city/town organizations/agencies with potential response/recovery roles to gather and disseminate information on the extent of damages, anticipated unmet needs, and other activities related to response and into recovery. ESF #11 will work to gather, synthesize, and distribute pertinent information to all related response partners, especially those partners identified as Primary Agencies for ESF #11 or executors of ESF #11 core capabilities.

7.2. Jurisdiction, agency, private-sector, non-governmental, and volunteer organization representatives within the YCEOC will assist with meeting the information collection, analysis, and dissemination needs/methods of the JIC and YCEOC. This will include maintaining contact with their local PIOs for reports and updates.

7.3. Some incoming agricultural and natural resource information/requests (e.g. expenditures and entering into contracts) into the YCEOC may require a vetting process through the Policy Group and/or the YCEOC Manager due to legal, policy, ethical, or other concerns.

7.4. The YCEOC will be responsible for collection, analysis, and dissemination of the latest incident information and resources as depicted in Figure 2: YCEOC Information Collection, Analysis, and Dissemination process.

According to the WA State Dept. of Ecology the dairies did not request government assistance with disposal until 48 hours after the event. (Personal Communication with Central WA Ecology on May 16, 2019 and October 17, 2019)

Washington laws require the owners of dead animals to dispose of them within 72 hours of death. (WAC 246-203-121)

When local agencies did not act Governor Inslee allocated $100,000 from state emergency funds to assist with mortality management. This allocation bypassed the legal requirements in place for emergency expenditures. (RCW 38.52.091, RCW 38.52.100, RCW 38.52.105)

RCW 38.52.091 (3) Mutual aid and interlocal agreements must include the following:

Purpose

The purpose must state the reason the mutual aid or interlocal agreement or compact is coordinated, the parties to the agreement or compact, and the assistance to be provided.

Authorization

Article I, section 10 of the Constitution of the United States permits a state to enter into an agreement or compact with another state, subject to the consent of Congress. Congress, through enactment of Title 50 U.S.C. Sections 2281(g), 2283 and the Executive Department, by issuance of Executive Orders No. 10186 of December 1, 1950, encourages the states to enter into emergency, disaster and civil defense mutual aid agreements or pacts.

Implementation

The conditions that guide the agreement or compacts may include, but are not limited to:

(a) A statement of which authority or authorities are authorized to request and receive assistance and the conditions that must exist for the request or receipt of assistance.

(b) A statement of how the requests for assistance may be made, what documentation of the request is required, the specifics of any details included in the request, and the required approval for the request.

(c) A statement of the direction and control relationship between the personnel and equipment provided by the jurisdiction to the requester and the requirements of the requester to coordinate the activities of the jurisdiction providing the assets.

(d) A statement of the circumstances by which the assisting jurisdiction may withdraw support from the requester and the method by which this is to be communicated.

General Fiscal Provisions

The terms of reimbursement must be stated defining the relationship between the requesting jurisdiction and the aiding jurisdiction, when reimbursement will be made, and details of the claim for reimbursement. The provisions may include statements that discuss but are not limited to:

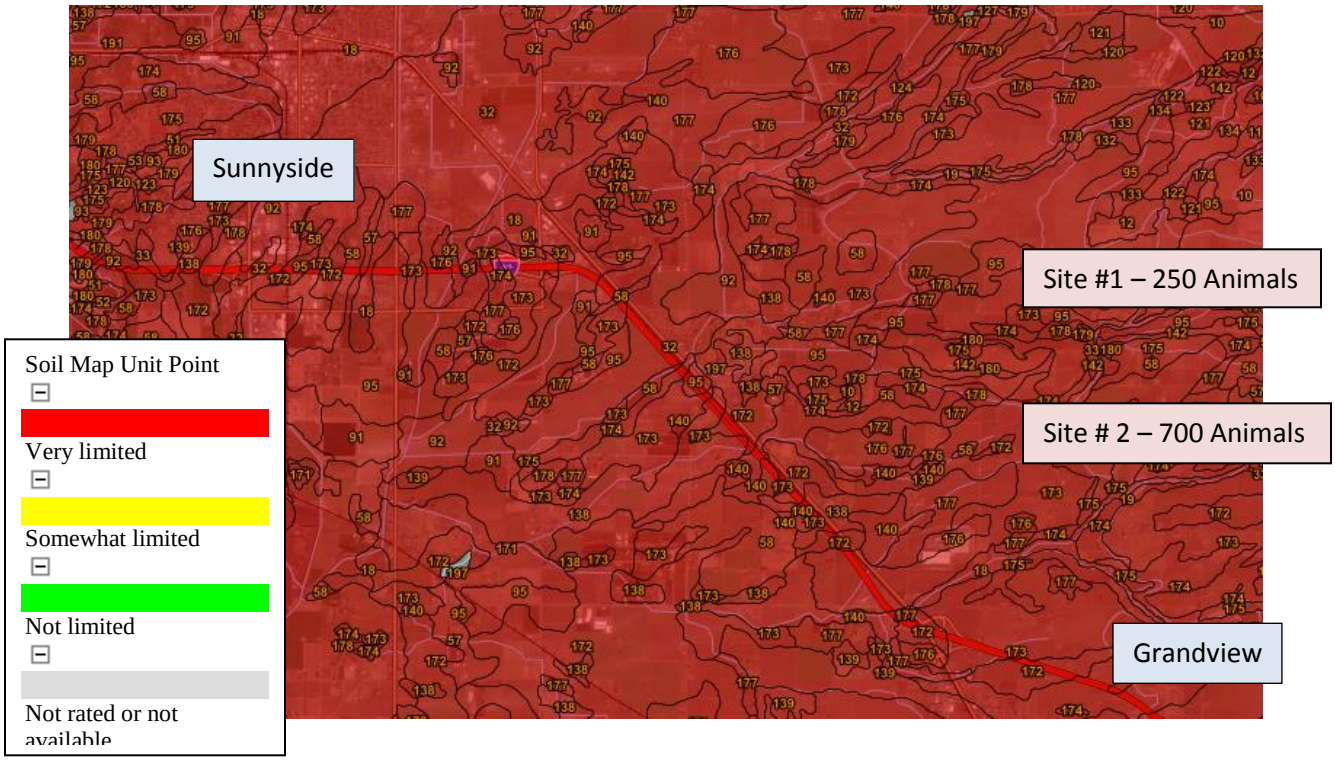
(a) A statement of what costs are incurred by the requesting jurisdiction.

(b) A statement of what costs and compensation benefits are made to individuals from the aiding jurisdiction by the requesting jurisdiction.

The WA State Dept. of Ecology, WA State Dept. of Agriculture and the Yakima Health District worked together to monitor composting of 950 dead cows on two dairies. The Yakima Regional Clean Air Agency was involved in the early stages of oversight. (Personal Communication with Central WA Ecology on May 16, 2019 and October 17, 2019)

950 animal carcasses were composted in an area that the Natural Resource Conservation Service lists as "poor" and "very limited" for composting mortalities. The agencies know this or should know this. (NRCS Soil Survey)

Large Animal Mortality Composting Sub-Surface – NRCS Soil Survey



There is no monitoring of adverse health events or harm to the environment from this composting. (Personal Communication with Central WA Ecology on May 16, 2019 and October 17, 2019) Specifically:

- There has been no air monitoring for air pollutants of any kind including pathogens and allergens

- There are no plans for air monitoring when the compost is turned and turning compost generates large amounts of dust
- There has been no groundwater monitoring in spite of the fact that the aquifer in this regions is already severely contaminated
- There are no plans for deep soil testing beneath the compost yards to monitor leaching to the aquifer in spite of prior studies that show significant leaching from LYV manure compost operations
- Neighbors were not informed about the composting. Neighbors were not advised to look for or report adverse health impacts. There have been no health surveys.

A brief literature search finds studies that list significant health and environmental risks from composting animal mortalities.

Some passages from the literature:

"The use of mortality composting as the main method of carcass disposal on a mass-scale (known as mass mortality composting) is probably only suitable for small- to medium-sized carcasses." (Wilkinson, 2007)

"Under certain conditions, enteric bacterial pathogens are known to be able to regrow in composted organic materials when temperatures decline to sub lethal levels. This is not the case for obligate parasites or organisms that require hosts to multiply such as viruses, protozoa and helminth pathogens. Moisture, organic matter stability and microbiological competition are the key factors that influence the regrowth of pathogens in composts." (Wilkinson, 2007)

"Large clumps of solids (e.g. a whole carcass or parts of one) reduce the efficiency of heat inactivation in a composting pile because they take longer to heat than smaller particles." (Wilkinson, 2007)

"Carcass composting, when done correctly with proper attention to the design, layout, monitoring, maintenance, and environmental impacts of the system used, may be considered an efficient and safe method of disposing of animal carcasses. Composting achieves adequate levels of microbial pathogen reduction, although spore-forming bacteria and prion agents may not be completely eliminated." (Berge et al, 2009)

"Results of this study demonstrate that ambient temperatures < $0^{o}C$ and frozen mortalities provide no barrier to the use of open-air windrows for disposal of cattle mortalities. As well, stacking up to 3 layers of full-sized cattle mortalities in a windrow did not affect temperature profiles, residual flesh or bone, or analyses of the finished compost. Under the climatic conditions of southern Alberta, layering mortalities would reduce space

requirements for large-animal mortality composting in a feedlot setting." (Stanford et al, 2007)

"Analysis of ammonia-N concentrations (Table 6) indicated statistically significant ($p < 0.05$) increases at depths of up to 90 cm (3 ft) beneath test units constructed with silage or leaves, and up to 30 cm (1 ft) beneath straw/manure test units. These increases — which range from 200 – 800 mg/kg in the top 15 cm of soil — are 40-160 times the mean NH3-N concentration in the top 15 cm of soil prior to composting (5.2 mg/kg), and are roughly equivalent to N application rates of 360 – 1440 kg/ha." (Glanville et al, 2006)

"The present study shows that under cold winter conditions composting cattle mortalities with manure is possible and increases the TN andNH4 content in the final compost. The emission rates of CO2, CH4 and N2O increased significantly when cattle mortalities were included with manure in composting windrows, with CH4 emissions accounting for <4% of total C emission loss." (Xu et al, 2007)

"The downwind data show that the airborne endotoxin concentrations decreased exponentially with distance from the lot edge. Decreasing an individual's proximity to the dairy should lower their risk of airborne endotoxin exposure and associated health effects." (Dungan and Leytem, 2009 b)

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Attachment 1

Notes from Meeting – Friends of Toppenish Creek and Central WA Ecology – Regarding Composting of Cows killed during a winter storm, May 16, 2019

Present: Sage Park, David Bowen, Dean Effler, Sandy Braden, Jean Mendoza

Where did the cow deaths occur and where are most of the cows being composted? Which dairies were most impacted? Ecology does not say. They are not sure whether they can legally reveal that information.

Sage says:

- The "blizzard" occurred on February 9
- Ecology was contacted on February 11
- Some dairymen began composting immediately
- About half of the 1,800 dead cows went to landfills and half were composted
- Large numbers of mortalities occurred at two dairies and Ecology was involved at those two sites
- Washington State Department of Agriculture (WSDA) has the lead. Ecology, South Yakima Conservation District (SYCD), Yakima Health District (YHD) and the Yakima Regional Clean Air Agency (YRCAA) are involved.
- Initially the composting sites were inspected every two weeks. Now the inspections are monthly
- Ecology made sure that there was enough carbon – mint plugs and bark. This was added when the temperatures were not high enough. They did the best they could under difficult circumstances.
- Ecology is now working with Yakima County Emergency Management and the Farm Bureau on ways to better handle a future emergency, get the word out faster.
- What will happen to the end product? Bones will go to landfills and the compost will be used like regular compost. Compost won't be identified as anything special.

For more information FOTC should talk to Chery Sullivan from the WSDA Dairy Nutrient Management Program. FOTC told Ecology that the prior Director of the DNMP said that WSDA did not inspect compost operations and left that up to Ecology.

FOTC asked whether there are health risks associated with composting dead cows. Sage said that Ecology is asking how to mitigate the risks and make sure the public is safe. No specifics.

The $100,000 from Washington State to address the emergency came from the Governor's budget and was used for purchase of bulk materials – mint plugs and bark

The team consulted an expert from Washington State University (WSU), name unknown

FOTC asked how to make sure pathogens are not transferred to people. Ecology advised talking to Chery Sullivan. It appeared that there is a decontamination process – not sure what that entails.

YRCAA was there to see about odor. Ecology does not know whether YRCAA taught the inspectors how to assess odor.

Composting is being done in uncovered windrows. Inspections continue

Challenges: The Farm Bureau wanted to do large scale composting at the Port of Sunnyside. Ecology had to investigate that proposal. A couple of days later a decision was made to do something immediately. The two large dairies had already started composting

According to Ecology the dairies had approached landfills and learned that Cheyne could not take very many. Between 600 and 800 mortalities were sent to Oregon. There were lots of nuances involving franchise agreements, hauling protocols, etc.

Ecology is working with the Utilities and Transportation Commission (UTC) to make sure there are plans for the future. There are plans to talk with other agencies.

If someone downgradient from the areas with large mortality composting tests their well and finds pathogens what are their next steps?

- Contact YHD
- How much help can they expect? Ask YHD
- Should also inform Ecology

Jean notes that, when homeowners complain about well water pollution the typical response is "You can't prove it came from my dairy." The burden of proof is on the homeowner and this is very difficult.

Sage says the Public Health and Ecology focus would be on providing clean drinking water

Jean reminds people that there is clear evidence of leaching from Yakima Valley composting operations

WSDA is addressing the operations with smaller numbers of mortalities.

Dean notes that the agencies have been looking at process objectives. How about outcome objectives? Could Ecology do serial testing of several downgradient wells?

There was discussion about what pathogens Ecology normally tests for.

Sage agreed to forward FOTC questions to Chery Sullivan and help set up a Q & A meeting with WSDA

Friends of Toppenish Creek Question's regarding Emergency Composting of Animal Mortalities in the Lower Yakima Valley

1. Do you have copies of the information that was given to neighbors of the compost yards?
    a. What radius of impacted neighbors was informed?
    b. Information in Spanish?
    c. Who composed and distributed the information
    d. Who was listed as a contact if neighbors noted problems?
    e. What were people told to look for? To report?

    Ecology did not know the answers to these questions

2. What composting protocols were used?
    a. NRCS Part 637 Environmental Engineering Handbook, Chapter 2, or Ecology's On-Farm Composting of Livestock Mortalities, WSDA Livestock Disposal Manual, or other? Ask WSDA
    b. What protocols does the Yakima Health District use? Ask YHD
    c. Runoff? Ecology says that leachate on the two large dairies was directed to the dairy lagoons. Is it legal to add leachate from composting carcasses to regular manure lagoons? David believes this is acceptable so long as the carcasses are not placed in lagoons.
    d. Dust and air contamination from the windrows- How is this monitored and controlled, especially during turning of the compost? Ask WSDA
    e. How do operators control rodents, vectors, access to wildlife and pets? Ecology believes that the bulky material addresses this.
    f. What is the recommended C:N ratio and how is this monitored? Ask WSDA (Note: the NRCS Environmental Engineering Handbook says 25:1 – 40:1 on page 2-53)
    g. What testing is being done – soils, water, and air? Ask WSDA
    h. What is the ratio of carcass weight to bulk material weight or volume? Ask WSDA
    i. What testing is done on the carcasses? What are the anticipated decomposition products and gasses? Ask WSDA

3. How are pathogens addressed? Ask WSDA

a. Salmonella. Gram negative rods from the family Enterobacter. See Hoards Dairyman at https://hoards.com/article-298-keep-on-top-of-salmonellosis.html and CDC at https://www.cdc.gov/salmonella/general/technical.html
b. Listeria. Gram positive rods. See The Cattle Site at http://www.thecattlesite.com/diseaseinfo/192/listeriosis/ and the CDC at https://www.cdc.gov/listeria/technical.html
c. Campylobacter. Gram negative rods. See APHIS at https://www.aphis.usda.gov/animal_health/nahms/dairy/downloads/dairy02/Dairy02_is_SalCampy.pdf and CDC at https://www.cdc.gov/campylobacter/index.html
d. Cryptosporidium. Parasite. See The Cattle Site at http://www.thecattlesite.com/diseaseinfo/209/cryptosporidiosis/ and CDC at https://www.cdc.gov/parasites/crypto/index.html
e. Shiga toxin producing e-coli. Gram negative rods. See Journal of Dairy Science at https://www.ncbi.nlm.nih.gov/pubmed/15653509
f. Johnnes Disease. Mycobacterium para tuberculosis. See The Cattle Site at http://www.thecattlesite.com/diseaseinfo/173/johnes-disease/ and APHIS at https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/nvap/NVAP-Reference-Guide/Control-and-Eradication/Johnes-Disease
g. Prions?
h. Fungi?

4. Were the dairies insured for such emergencies and loss of livestock? Are they insured for water or air pollution from mortality composting? Ask WSDA
5. What was the additional cost to tax payers?
    a. Ecology – Just part of normal work load
    b. WSDA – Ask
    c. YRCAA – Ask
    d. SYCD – Ask
    e. YHD - Ask
6. Are there surveillance plans for adverse health effects? Ecology is not sure. Suggests asking DOH. FOTC suggestions:
    a. Surveys of neighbors
    b. DOH routine data collection by zip code
    c. Air quality surveillance
    d. Testing down gradient domestic wells for potential pathogens
    e. Monitoring wells at compost sites

7. **Why, in a county with 35% of all Washington milk cows, was there no plan already in place?**
    a. The USDA APHIS has a manual for emergency preparedness at https://www.aphis.usda.gov/animal_health/emergency_management/downloads/documents_manuals/beef_feedlot.pdf
    b. In 2008 bovine tuberculosis was found in a California herd of dairy cows. The USDA spent $20 million for investigation and over 5,000 animals were depopulated. See USDA APHIS at https://www.aphis.usda.gov/animal_health/animal_health_report/downloads/AHR_08/2008_US_Animal_Health_Report.pdf
    c. In 2013 bovine tuberculosis was detected in a Grant County dairy cow and eleven cows were identified as potentially infected.
    d. Yakima County has an emergency response system in place with a staff of four.

Attachment 2

Notes from Meeting of Community Members with Sage Park, Director of Ecology's Central Washington Ecology Division, Oct. 17, 2019

Present: Sage Park, Terra Burgess, Linda Dyjak, Jim Dyjak, Jean Mendoza, Dean Effler

Agenda:

- Dioxins in well water
- Mortality Composting
- Flies
- Clean Drinking Water Forum

Dioxins: Ecology will do a pilot follow-up study this fall and next spring. Ecology will re-test 15 wells where Friends of Toppenish Creek (FOTC) found dioxins and furans during testing in 2018. Sampling will begin on November 4 for dioxins, nitrates, lead and arsenic. Site selection will be off reservation around the wells FOTC tested.

Dean brought up the fact that FOTC promised well owners anonymity. He will work with Ecology to make sure the well owners are OK with further testing. The addresses were accessed when FOTC share meta-data with Ecology.

Sage represents the State of Washington on the toxic substance task force. Jean asked about poly- and per-fluorinated alkyl substances (PFAS) and the potential for occurrence of these substances where bio-solids are spread on cropland. She noted that a dairy in Maine can no longer sell their milk due to high levels of PFAS that are likely due to bio-solid application. Sage is learning more about these hazardous substances. Fire fighters are allowed to fight fires with PFAS but cannot use them in training.

Clean Drinking Water Forum: Ecology will not be attending due to pending litigation. Ecology asked for a written report from the CDW project.

Animal Mortality Composting: Two Lower Yakima Valley (LYV) dairies began composting dead cows prior to requesting Ecology input.

What guidelines were followed? Ecology states that they did not have great guidelines. (In 2005 Ecology developed a document, *On-Farm Composting of Livestock Mortalities,* as required by Substitute Senate Bill 5602). Ecology worked with the Washington State Department of Agriculture (WSDA), the Yakima Health District (YHD) and their internal experts. The agencies focused on increasing bulking materials and achieving high enough temperatures in the compost. Optimal carbon to nitrogen ratios were not achieved.

Ecology does not have authority over private wells. Sage was not sure whether Ecology can require related well water testing.

Leachate was collected and put into lagoons. Ecology feels that they managed this well.

The dairies are not marketing the compost. The compost will be used on the dairy's own cropland. Linda asked who oversees the compost application. Jim asked who will look at runoff from the fields where the compost is applied. Sage believes the compost was hot enough for a long enough period of time to kill pathogens.

The closest neighbor was ½ mile from the composting site and that neighbor was notified by the dairies.

The Yakima Regional Clean Air Agency (YRCAA) was on-site for the first few inspections.

Jean noted that the Cheyne landfill is lined and has monitoring wells. Sage said the Cheyne landfill would not take more mortalities due to capacity.

Jim asked whether Ecology has gone to the dairies and asked about plans for the future. He notes that the tax-payers paid top dollar for dead livestock.

Sage stated that the dead cows were already decaying when Ecology became involved. Sandy asked why more cows were not hauled to Oregon. The state of decay was the reason.

Dean asks about testing water wells for bacteria. Jean and Jim noted that experts told the LYV Groundwater Advisory Committee in the early days that it is nearly impossible to treat an aquifer for bacteria once it is contaminated.

Jim stated that Montana farmers, who deal with winter snow storms all the time, thought it was outrageous that LYV dairies could not manage their cows in a storm.

Flies: Linda stated there are flies from a dairy near her home that actually bite. If you smash one it contains blood.

Jim stated that the Moxee dairy is expanding and is no longer hauling out their dead cows. He found no building permit applications for the expansion. Odors are getting worse.

Follow-up: Sage will talk to the Departments of Health and Agriculture and get back to the citizens.

Transcribed from written notes taken by Jean Mendoza on October 23, 2019. This summary is not a complete record of the conversation.