Red Water Discharges

The Tonopah egg production plant utilizes surface impounds for the wastewater from the washing of eggs. These surface impounds are commonly called “lagoons” at the Tonopah egg production plant. Arizona Administrative Code provides a definition in Title 18 Environmental Quality, Chapter 9 Water Pollution Control, Article 1 Aquifer Protection Permits – General Provisions, Definitions (R18-9-101.44):

> “Surface impoundment” means a pit, pond, or lagoon with a surface dimension equal to or greater than its depth, and used for the storage, holding, settling, treatment, or discharge of liquid pollutants or pollutants containing free liquids.

The egg wash water that discharges into the lagoons is regulated and Arizona Administrative Code provides a definition in Title 18 Environmental Quality, Chapter 9 Water Pollution Control, Article 9 Arizona Pollutant Discharge Elimination System, Definitions (R18-9-A901.29):

> “Process wastewater,” for purposes of Article 9, Part D, means any water that comes into contact with a raw material, product, or byproduct including manure, litter, feed, milk, eggs, or bedding and water directly or indirectly used in the operation of an animal feeding operation for any or all of the following:
> a. Spillage or overflow from animal or poultry watering systems;
> b. Washing, cleaning, or flushing pens, barns, manure pits, or other animal feeding operation facilities;
> c. Direct contact swimming, washing, or spray cooling of animals; or
> d. Dust control.

Additionally, a more specific definition is provided for an impoundment (lagoon) in Arizona Administrative Code provides a definition in Title 18 Environmental Quality, Chapter 9 Water Pollution Control, Article 4 Nitrogen Management General Permits, Definitions (R18-9-401.5):

> “Impoundment” means any structure, other than a tank or a sump, designed and maintained to contain liquids. A structure that stores or impounds only non-contact stormwater is not an impoundment under this Article.

Since process wastewater is regulated, it has to be controlled and contained per regulations in Arizona Administrative Code provides a definition in Title 18 Environmental Quality, Chapter 9 Water Pollution Control, Article 4 Nitrogen Management General Permits: Concentrated Animal Feeding Operations (R18-9-403.A.3):

> 3. Following the requirements in subsection (B), construct and maintain a lining for an impoundment, used to contain process wastewater or contact stormwater from a concentrated animal feeding operation to minimize the discharge of any nitrogen pollutant; and

Tonopah residents observed red water in the runoff ditch that crossed 411th Avenue at the Thomas Road alignment. The ditch is connected to the irrigation ditches of the agriculture fields at the Tonopah egg production plant. It is not known how often red water was discharged, but it was observed on February 10, 2023, February 22, 2023, March 4, 2023, March 5, 2023, March 6 2023, and April 13, 2023. Exhibit 7 contains

photos of the discharges. The red water discharge was from the lagoons, which contained the process wastewater. The odor from the red water was often nauseous, offensive, objectionable, and obnoxious.

The Tonopah egg production plant didn't have a proper permit to discharge from the lagoons and Arizona Department of Environmental Quality (ADEQ) was notified. Inspectors from the Groundwater Protection Inspections and Compliance Unit and Solid Waste Units responded and performed inspections. The Water Quality Unit inspection (Inspection 418100, photo 22) noted that the north lagoon was overtopping and the egg plant's Environmental Program Manager provided a photo of the red water in the lagoon on April 13, 2023 in an email to ADEQ (See Exhibit 8).

A Notice of Violation (Case ID #: 21058) was issued to Hickman's Egg Ranch, Inc. for Discharge without an Aquifer Protection Permit and Failure to control or dispose of nitrogen contaminated water resulting from an activity associated with a concentrated animal feeding operation, up to a 25-year, 24-hour storm event equivalent, to minimize the discharge of a nitrogen pollutant. Hickman's Family Farms counsel responded to the Notice of Violation on March 3, 2023 and agreed to implement compliance conditions. The response also pointed out that "Hickman's was not required to have an APP to apply water from any source, including wastewater, to grow agricultural crops on its own land. A.R.S. § 49-250(15)."

A.R.S. § 49-250 identifies exemptions from Aquifer Protection Permit requirements and an itemized exemption list. Subsection B item 15 (49-250.B.15) states:

> "Application of water from any source, including groundwater, surface water or wastewater, to grow agricultural crops or for landscaping purposes, except as provided in section 49-247."

The ADEQ Groundwater Protection Inspections and Compliance Unit Manager responded to Hickman's Egg Ranch – Tonopah on May 23,2023. The content of the letter was as follows:

> "Under A.R.S. § 49-250(B)(15), a facility's wastewater may be applied to an agricultural crop.
>
> After performing multiple in-person inspections and reviewing submitted laboratory data and supplementary documentation, ADEQ currently understands Hickman's egg processing wastewater is being beneficially applied to an agricultural crop at the agronomic rate and, therefore, is exempt from the APP program under this statutory provision above.
>
> ADEQ notes that in order for the application of wastewater to the crops to remain exempt, the wastewater must be applied to the crops in a beneficial manner and only at the agronomic rate where little to no runoff occurs.
>
> ADEQ reserves the right to reassess this determination if and when new information becomes available."

Unfortunately, ADEQ responded allowing a situation where "only at the agronomic rate where little to no runoff occurs. "Runoff" means discharge and the Aquifer Protection Permit program does allow for "little" runoff. Additionally, "little" runoff isn't quantified and "little" runoff from 100 gallons is considerably different than "little" runoff from 10,000,000 gallons. "Little" should be left to the facility to decide.

The bigger error is not following through with the analysis of the statutes. ARS 49-250.B.15 allows the application from any water source except as provided by section 49-247. Section 49-247 gives the director authority to develop agricultural general permits with the terms and conditions of the permits being agricultural best management practices.

Administrative Code provides a definition in Title 18 Environmental Quality, Chapter 9 Water Pollution Control, Article 4 Nitrogen Management General Permits, Definitions (R18-9-401.5) is an agricultural general permit as defined in 49-247. Within the Nitrogen Management General Permit, R18-9-404.3 requires that regulated process wastewater must be contained in a lined impoundment. Therefore, the process wastewater in the Tonopah egg production plant lagoons are not exempted in ARS 49-250.B.15 because the process water is regulated under the Nitrogen Management General Permit and must be contained in the lagoons (impoundments).
After all, it isn't common sense to establish regulations on polluted water and then allow it to be discharged.

ADEQ must review its guidance which allows for regulated process wastewater to be applied to agricultural crops and landscaping and provide clarification in the Arizona Administrative Code if necessary.

Discharge of the noxious, polluted red water shows a disregard for the environment, indifference for the neighbors, and lack of desire to do what is right. Especially, as the red water discharge events didn't cease, but continued for weeks.

Breach of Settlement Agreement

A group of Tonopah residents sued Hickman's Family Farm over the Tonopah egg production plant nuisance. At times the residents had to endure offensive, obnoxious, objectionable odors and fly infestations. Horrible odors continued into June 2025.

Hickman's Family Farm settled the nuisance lawsuits (case numbers CV2017-011959 and CV2023-0053480) with the plaintiffs in November 2023. There were several settlement terms in the settlement agreement. Section 3.4 of the Settlement Terms states:

> Section 3.4 Beginning one (1) year of the Effective Date, Hickman's will cover the two wastewater evaporation lagoons, and future wastewater evaporation lagoons, at the Tonopah Farm[1] in a manner intended to reduce the release of odors while preserving the effective use of the lagoons.

In November 2024 the two-wastewater evaporation lagoons were not covered and are currently not covered. In communications with attorney to attorney, the Hickman's Family Farm attorney revealed that the "cover" was to be floating hollow balls provided by CIC Ball Company. In reviewing the company's website (https://catalog.cicball.com/product/hollow-plastic-balls/bird-deterrent-floating-balls) the floating balls are primarily a bird deterrent. It also states that "[t]he U.V. Black Hollow Float Balls cover 91% of the surface area." 91% coverage isn't 100% and doesn't meet the settlement term to cover the lagoons. The website states that and additional benefit is "odor control," but when asked how it controls odors there was no response.

According to attorney to attorney communications, dated January 11, 2025 the Hickman's ordered the floating ball system from DID Ball Company, but production delays caused a tardy arrival of the system. To-date there's no evidence that the floating ball system has been installed on either wastewater evaporation lagoon.

The testimony of a leading industry and educational expert, Al Heber, his testimony was an impermeable cover that is sealed around the outside of the lagoon with a blower evacuating air from underneath the cover and treating it with a biofilter.

The Hickman's Family Farm chose to cover the two-wastewater evaporation lagoons with floating hollow balls, contrary to a leading industry and education expert. The lagoons have yet to be covered and malodors across the Tonopah community have continued. The Hickman's Family Farm has failed to cover the lagoons for 19 months and there is no indication that it will be done soon. It's time for the Hickman's Family Farm to change course and cover the two-wastewater evaporation lagoons 100% with equipment as recommended by the industry and educational expert. The Hickman's Family Farms doesn't value their commitment to the lawsuit plaintiffs and has disregard for the Tonopah resident trying to enjoy their property without an obnoxious, objectionable, offensive odor. They must be held accountable and penalized for a breach of the settlement agreement.

Nuisances: Flies and Odor

Once the hens populated the Tonopah egg production plant in late 2014, the fly nuisance started. There was a significant increase in fly population throughout the community, which caused an almost constant invasion into homes. One of the massive fly infestations started in December 2018 and continued into February. Exhibit 9 has photos of the flies on a covered walkway to a home. Inside the home food had to be covered as it was ate off of plates and flies literally crawled down straws that were in covered glasses. Flytraps, fly strips, bug zappers, insecticide, etc. had limited success. Residents probably spent many thousands of dollars over the years trying to keep their homes free of flies.

Something happened late into the nuisance lawsuit years and the fly nuisance seems to be abated and not near the problem. However, residents are skeptical that fly control will continue. The owners of the Tonopah egg production plant should have been responsible and good neighbors from the start of the operation and properly controlled flies. It took years of residents suffering, complaining, and a lawsuit before the owners finally acted.

The obnoxious, offensive, objectionable odor that spread through the Tonopah community soon began early on. In 2016 and again in 2017 there were over 180 odor complaints made to Maricopa County Air Quality Department. The odors continued into 2025. For some the odors were so pungent, probably caused by the ammonia emissions, that it was difficult to breath so they sheltered in their homes. Imagine being held hostage inside your home by the smell of 4+ million chickens.

Maricopa County Air Quality Rule 320 Odors and Gaseous Air Contaminants[1] regulates odors and it has been used in the past to enforce odor problems. Odor is an air contaminant and an air pollutant.[2] On June 6, 2016 the Maricopa County Air Quality Director, Philip McNeely, announced the intent to revise Rule 320. On November 16, 2017 Maricopa County Air Quality Department (MCAQD) held a workshop explaining the changes to Rule 320. Members of the Save Tonopah Oppose Poultry Plant (STOPP) spoke at the workshop and opposed the proposed change to remove regulation of odors and followed up written comments.

As part of the regulatory approval process, the Maricopa County Board of Health (MCBoH) must review MCAQD rules. At the MCBoH meeting on February 2, 2018 the first review of Rule 320 was conducted. STOPP members spoke at the meeting and opposed the proposed change to remove regulation of odors and followed up written comments.

The MCAQD held a hearing on April 4, 2018 regarding the changes to Rule 320. STOPP members spoke at the meeting and opposed the proposed change to remove regulation of odors and followed up written comments.

The MCBoH held a second meeting on July 23, 2018. At this meeting the MCBoH chose not to advance the changes to Rule 320 to do additional work and communicate with the Tonopah community.

No communication has occurred and MCAQD has not taken any action on Rule 320. However, MCAQD has essentially done away with odor requirement in Air Quality Operating Permits.

The original Air Quality Permit to Operate and/or Construct (Permit Number 140062, Revision Number 0.0.0.0, Dated 11/17/204) for the Tonopah egg production plant had the following requirement:

SPECIFIC CONDITIONS

Odor Control

1. Standards:

No person shall emit gaseous or odorous air contaminants from equipment, operations or premises under his control in such quantities or concentrations to cause air pollution.

[Rule 320 §300]

a. Material Containment Required: Materials including, but not limited to, manure shall be processed, stored, used and transported in such a manner and by such means that they will not unreasonably evaporate, leak, escape of be otherwise discharged into the ambient air in such quantities or concentrations as to cause air pollutions, smells, aromas, or stenches commonly recognized as offensive, obnoxious or objectionable to a substantial part of a community. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage or discharge, the installation and use of such control methods, devises or equipment shall be mandatory.

[Rule 320 §320]

In the Air Quality Permit to Operate and/or Construct (Permit Number 140062, Revision Number 0.0.2.0 & 1.0.0.0, Dated 5/24/204) for the Tonopah egg production plant, references to Rule 320 offensive, obnoxious or objectionable odors have been removed. It also appears that references to Rule 320 offensive, obnoxious or objectionable odors have been removed from other Air Quality Permits. However, by MCAQD's own rules permits must contain enforceable emission limitations and standards.[3]

Maricopa County Air Quality Department is playing a game with Rule 320 odor requirements. The agency should be held accountable for this subversive action of omitting Rule 320 odor regulation in Air Quality Operating Permits. The agency wasn't able to remove their responsibility for enforcing odor regulations in Rule 320 so through non-action on odor complaints and removing odor regulations in operating permits, the agency has been able to achieve its desired results – support industries that spew offensive, obnoxious or objectionable stenches to a substantial part of a community.

For years residents were not able to enjoy their property and the flies, particulate matter, and stench from the Tonopah egg production plant actually caused the Saddle Mountain RV Park to close. Rule 320 requirements must be put back into all Air Quality Operating Permits and enforced. Other states have various ways to make odor standards enforceable, MCAQD just has to want to do it.

[1] Rule 320 Odors and Gaseous Air Contaminants, Section 200 – Definitions:

203 ODORS: Smells, aromas, or stenches commonly recognized as offensive, obnoxious or objectionable to a substantial part of a community.

Rule 320 Odors and Gaseous Air Contaminants, Section 300 – **Standards:**

> No person shall emit gaseous or odorous air contaminants from equipment, operations or premises under his control in such quantities or concentrations as to cause air pollution.

[2] Rule 100 (General Provisions and Definitions), Section 200 – Definitions

> 200.9 Air Contaminant: Includes smoke, vapors, charred paper, dust, soot, grime, carbon, fumes, gases, sulfuric acid mist aerosols, aerosol droplets, odors, particulate matter, windborne matter, radioactive materials, noxious chemicals, or any other material in the out door atmosphere.
>
> 200.10 Air Pollution: The presence in the outdoor atmosphere of one or more air contaminants, or combinations thereof, in sufficient quantities, which either alone or in connection with other substances, by reason of their concentration and duration, are or tend to be injurious to human, plant or animal life, or causes damage to property, or unreasonably interferes with the comfortable enjoyment of life or property of a substantial part of a community, or obscures visibility, or which in any way degrades the quality of ambient air below the standards established by the Board of Supervisors.

[3] Rule 220 Non-Title V Permit Provisions, Section 302 Permit Contents:

> 302 PERMIT CONTENTS: Each permit issued under this rule shall include the following elements:
>
> > 302.2 Enforceable emission limitations and standards, including those operational requirements and limitations that ensure compliance with all applicable requirements at the time issuance, …

Air Quality Operating Permit

On November 17, 2014 Maricopa County Air Quality Department (MCAQD) a Non-Title Air Quality Permit to Operate and/or Construct (permit number 140062) for the Tonopah egg production plant. After a permit revision was done on July 12, 2016 an appeal was made on July 12, 2016 to the Maricopa Air Pollution Hearing Board challenging the agency's failure to perform a new source review, lack of application regulations and misapplication of regulations. The emissions from the henhouses, a major source of particulate and volatile organic compounds pollution was not included in the permit.

The official hearing (Case No. MCAPHB2016-01) was on November 7, 2016. While the Maricopa Air Pollution Hearing Board limited the consideration to a permit revision rather the entire permit and dismissed some items, it did allow others. The Final Decision and Order on December 2, 2016 read: "That the appeal as it relates to comment #8, #9, #11, #13, #14, and #17 is allowed, but evidence is limited to whether the Department properly calculated the emissions, characterized them as fugitive or point source, and, based upon the revised calculation, applied the proper permitting standards and procedures (e.g., did the source trigger a procedure other than the one that the Department used to process the permit application and revision)."

The Final Decision and Order went on to state: "Based upon the full consideration of evidence [or that the Department erred in treating all hen house emissions as fugitive, but that there is insufficient evidence] that the non-Title V minor permit revision procedure was proper and the Board remands, but does not vacate, the minor permit revision to the Department to clarify the basis for its position. The Department shall consider the information in this record and such additional information as it chooses to gather and shall apportion emission as fugitive or non-fugitive and render a decision on whether Hickman's Egg Ranch is or is not a major source."

More simply, the Maricopa Air Pollution Hearing Board said that Maricopa County Air Quality Department needed to put more rigors into the Technical Support Document to clarify if the emissions from the henhouses were fugitive or non-fugitive, and if they are non-fugitive, how much regulated pollution is being emitted.

An industry and education leader, Al Heber (PhD., P.E.), prepared a report estimating particulate matter 10 (PM10) and volatile organic compound (VOC) emission from the Tonopah egg production plant. He concluded that estimated PM10 emission is 46 tons/year, which does **not** include emissions from the manure sheds, pullet house, egg wash water lagoons, boilers, and diesel engines. The estimated VOC emission rate 126 ton/year, which does **not** include emissions from the manure sheds, pullet house, egg wash water lagoons, boilers, and diesel engines. The Clean Air Act mandates that sources emitting more than 100 tons/year acquire a Title V Air Quality Permit. Since MCAQD ignored the emissions from the henhouses, a Non-Title V Permit was issued to the Tonopah egg production plant.

MCAQD reworked the Non-Title V Technical Support Document to justify that the huge bank of fans drawing air across the henhouse and blowing it across the manure in the manure barn and out the building opening was not "vented." Since the pollution didn't vent, the emissions were fugitive rather than non-fugitive. Non-fugitive emissions are not part of the criteria when considering a Title V permit. Non-Title V Technical Support Document concluded "… the standard of 'reasonableness' had not been met. All of the emissions from the henhouses are fugitive and would therefore not be included in a determination as to whether the Title V thresholds have been triggered."

The decision that the building is not vented defies common sense – the fans collect air from the henhouse and discharge it somewhere. Through a vent? Fans collect air from the henhouse and discharge it into the manure barn where it is collected again and then vented through the building opening into the atmosphere.

MCAQD filed a response to the Final Order on May 26, 2017. A request was made for a new hearing primarily based on the new information in the Technical Support Document, but the Maricopa Air Pollution Hearing Board denied it on July 25, 2017.

Despite the paper efforts to protect the Tonopah egg production facility from a Title V permit, the reality is that volatile organic compounds greater that 100 tons/year have been vented out of the henhouses into the atmosphere contributing to air pollution causing ground level ozone smog. Pressure should be put on agencies to properly regulate industries to protect the environment and air that we breathe, not manipulate “facts” to give sweetheart deals to industry.

Lack of Public Notification of CAFO Construction

In November 2013, the Hickman's Family Farms purchased 360 acres on Indian School Road In Tonopah less than one mile upwind from the business area, and adjacent to family residents. No notice was given to the community and no sign was posted that an extremely large Confined Animal Feeding Operation consisting of 14 henhouses of 307,200 each for a total of 4,300,800 laying hens.

The Hickman's Family Farms requested and was granted an "agricultural exemption" to construct the Tonopah egg production plant. The agricultural exemption process in Arizona Revised Statutes[1] does **not** mandate any public notice requirement. Additionally, Maricopa County[2] is responsible for the implementation, which doesn't have a public notice requirement to notify neighbors that buildings housing millions of chickens will be built next to them. However, other county and city ordinances require neighbor notification and signage of zoning changes and construction of buildings such as gas stations and restaurants.

When Maricopa County issued a certificate of agricultural exemption for the Tonopah egg production, design and construction of the facility continued under the exemption of Maricopa County zoning ordinance and building safety ordinance.

Citizens have a right to know when planning and development changes occur that affect their lives and enjoyment of property. This wasn't required and didn't happen with the construction of huge henhouses for millions of chickens. Fourteen (14) henhouses and one pullet house and they were with an exemption of the building safety ordinance (i.e., electric & plumbing code, professional engineer stamped plans; and building safety inspections). Each henhouse is approximately the size of three football fields. Are the henhouses safe? There have been two enormous fires.

During the fifty-third legislature second regular session in 2018, Representative Barton, Mitchell, Payne, and Shooter and Senators Borrelli and Griffin introduced/supported bill HB 2503 building code exemptions; public notice (Exhibit 10).

Rural America citizens are not unworthy and have a right to know when planning and zoning changes and activities happen in their community. The agricultural exemption is a secret process where citizens are unaware of what is happening restricting interaction with their government. The agricultural exemption allows construction of colossal building without compliance to the building safety ordinance. The Arizona legislature must take up HB 2503 and pass it and the Governor must sign it into law.

[1] Applicable Arizona Revised Statutes: 42-12151 - Definition of agricultural real property; 42-12152 - Criteria for classification of property used for agricultural purposes; exception; affidavit; 42-12153 - Application for classification of property used for agricultural purposes; 42-13101 - Valuation of agricultural land; and 42-13102 - Statement of agricultural lease.

[2] Maricopa County agriculture exemption websites: https://www.maricopa.gov/DocumentCenter/View/6345/Agricultural-Exemption-Application-Packet-PDF?bidId= and https://www.maricopa.gov/646/FAQ-Answers

Regulatory Punishment

Tonopah residents filed a just nuisance lawsuit (CV2017-011959) on August 24, 2017 against Hickman's Egg Ranch, Inc., who owns and operates the Tonopah egg production plant. Two other nuisance lawsuits were also filed against Hickman's Egg Ranch, Inc. The well being of people and enjoyment of property was impacted because of flies, odor, and particulate matter from the Tonopah egg production plant. Hickman's Egg Ranch, Inc. settled the residents' nuisance lawsuit in November, 2023.

In 2016 a complaint (Case 2:16-CV-03319) was also filed against Hickman's Egg Ranch, Inc. by Don't Waste Arizona, Inc. for violating the Emergency Planning and Community Right to Know Act (EPCRA) for the continuous discharging of ammonia reporting requirements from the Tonopah and Arlington egg production plants. On November 2, 2018 judgment was against the Hickman's Egg Ranch, Inc. and the court ordered a payment to the U.S. Treasury as a fine and awarded payment of plaintiff attorney fees.

During the fifty-fifth Legislature First Regulator Session 2021 Representative Dunn introduced HB 2372 (Exhibit 11) and Senator Kerr introduced an identical bill, SB1448. The bills were consolidated with a slight modification. Business owners and citizens meet with Senator Kerr and testified before the House Land, Agriculture, and Rural Affairs committee, but the efforts were futile. Comments and testimony from other interested parties such as Save Tonopah Oppose Poultry Plant; John Hopkins Bloomberg School of Public Health; Sierra Club, Grand Canyon Chapter; Animal Defense League of Arizona, Environment America Clean Water Program; Socially Responsible Agriculture Project; and more. (See Exhibit 12, March 23 2021 letter to AZ Legislators.) All efforts to oppose the bill failed and the bill passed both Houses and the governor signed it into law.

Two paragraphs from the letter to the Arizona Legislators are worth repeating:

> While purporting to protect farming and farmland, U.S. right to farm laws impede private property rights and the capacity to file nuisance lawsuits. They disrupt the common law by tipping the scales in favor of big agribusiness and industrial agriculture, as opposed to protecting other kinds of more traditional farming operations, local business operations, and enjoyment of private property. The proposed right to farm amendment is emblematic of how powerful agribusiness interest groups dominate and overtake government and lawmaking at the expense of real people, real voters, and real independent family farmers. If enacted, Arizona will help advance market domination by extractive polluting agribusiness industries to the detriment of other farmers, rural communities, and the environment.
>
> The CAFO industry has largely succeeded in escaping responsibility for its impacts by rolling back federal regulations and stripping away public access to information regarding CAFO pollution. Thus, as proposed in this bill, for Arizona to enact a presumption that an agricultural operation is not a nuisance if it's operating in compliance with local, state, or federal laws is a misnomer. Most industrial animal agricultural operations have successfully avoided any meaningful regulation to begin with. In effect, SB1448 will make it so an agricultural operation could be a significant polluter and still not be held accountable and liable, simply by arguing they are operating in compliance with nearly non-existent or weak laws.

And the referenced statement from Arizona attorney, Howard Shanker, is very powerful:

> (1) the legislation purports to take on a problem that does not exist; and

(2) the specific legislative language is not intended to protect agriculture from frivolous suits, but rather to allow agricultural facilities to operate with impunity.

This legislation is a shield for wrongdoing. It is not in the public interest and/or based on sound policy. There are already sufficient protections in place to guard against frivolous litigation and the wrongful imposition of punitive damages (which is likely why the problem does not exist). This legislation does not serve its stated purpose.

The bill awards costs and fees to the prevailing party. Generally fees are not available in tort actions. This is because the prospect of having to pay a defendants' fees could have a chilling effect on a plaintiff's willingness to bring suit. The proposed language essentially shields agricultural operations from the prospect of having to pay punitive damages. Not only would an operation have to meet the new statutory definition of "nuisance," it would have to have been subject to a "criminal conviction or a civil enforcement action."

The law took away the rights of local governments to protect public health and welfare of their citizens. There was no provision to protect the food supply chain or food itself. It probably was not a coincidence that the bills were introduced and signed into law while the Tonopah egg production plant lawsuits were being litigated. It was legislation to punish rural American residents that suffer from the pollution of Concentrated Animal Feeding Operations and the protect owners from justifiable nuisance lawsuits.

This is legislation in the wrong direction. Its people and the environment that need to be protected, not owners of agriculture businesses that create nuisances. Legislators must under take friendly regulations to encourage innovation and reduce harmful discharges and emissions from farm operations. Improper and protected farm operations can pollute the air, land, and water. Consider the "friendly" regulations that caused the:

- Automobile industry to install catalytic converters on vehicles to reduce exhaust emissions;
- Electric generation industry to install scrubbers and bag houses on coal fired plants to reduce emissions;
- Wastewater treatment facilities to meet discharge standards and limitations; and
- Landfill industries to install liners and capture and utilize methane emissions.

Exhibit 1

Hickman's Family Farms

Biosecurity Plan – Tonopah

2024

(Edits & Redactions by Arizona Department of Agriculture)

HICKMAN'S
FAMILY FARMS

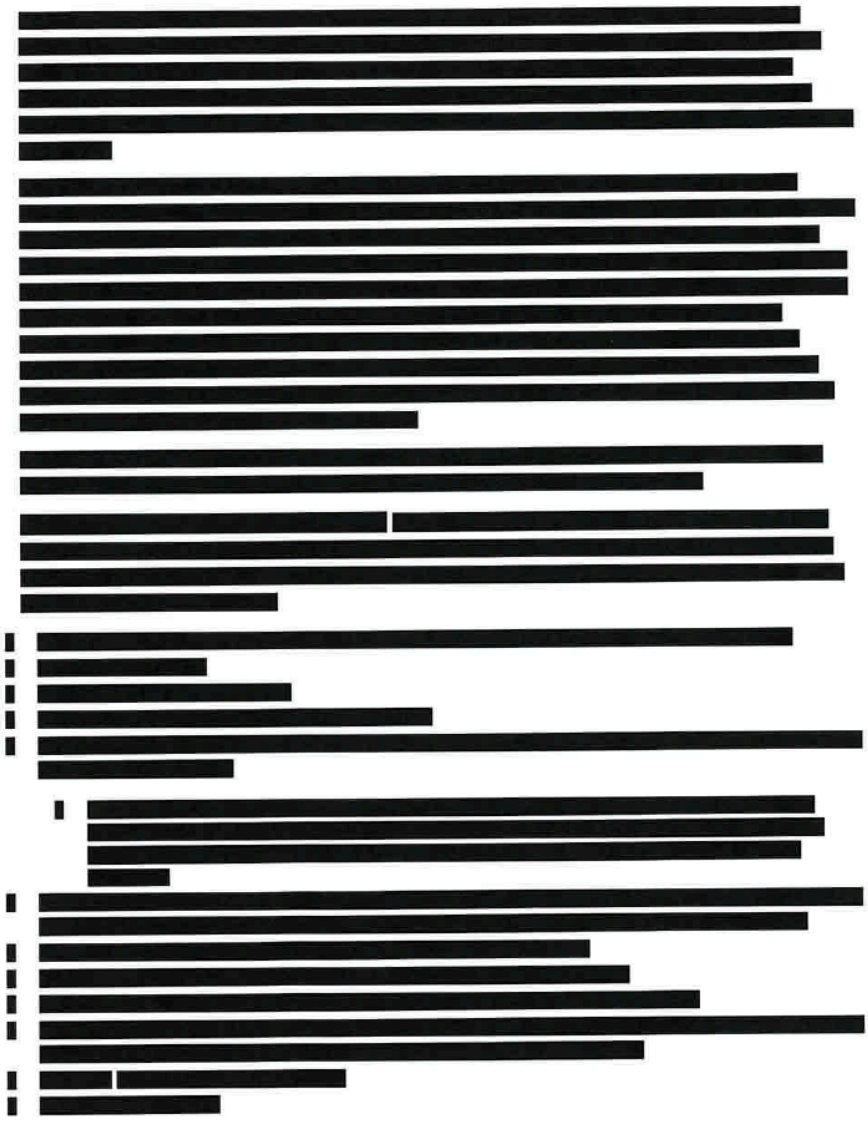
Biosecurity Plan – Tonopah

Biosecurity Plan – Tonopah

This Biosecurity Plan is based on the NPIP, APHIS, FDA and USDA Biosecurity requirements and Hickman's Egg Ranch Inc. will implement, monitor and follow all Biosecurity processes by implementing the guidelines described in the following sections.

Date Created: 03/23/2022
Date Validated Arizona OSA:

20. Live Poultry Movements –Replacement Pullets/Spent Hens



Spent Hens:

Hens are euthanized on site, in the hen houses, using carbon dioxide. Equipment used to euthanize hens is owned by Hickman's, and is disinfected when being moved between sites. Spent hens are hauled off site to our Hickman's protein plant, located at 7909 S. 331st Ave, Tonopah, AZ.

In case of an FAD event, the spent hens can be hauled to Southwest regional landfill (for more details see Section 28, Pg. 32 "Disposal and Pest Control). Premises personnel will be responsible for loading of spent hens onto hauling vehicles. Premises Management will train employees on the loading of spent hens. If approved VSD + heat will be considered for LPAI or HPAI whole farm depopulation.

- This SOP will be used to train employees in the following areas prior to loading spent hens.
  a. Proper use of this PPE
  b. Changing and disposal of PPE
  c. Disinfectants

Premises and Haulers should contact transportation manager for Product Movement Permit requirements.

Premises personnel will be responsible for the loading of spent hens or unloading of replacement pullets on-site.

Complex Manager and Senior Management will evaluate the potential of "onsite" composting.

21. Mortality Movement and Disposal

[redacted]

Mortality removal and processing: Mortality is removed from the housing system by layer house barn associate and placed in mortality containers at the back of the barns. The mortality containers are picked up and emptied at least 5 days a week. Mortality barrels are removed by a disinfected HFF truck dedicated to only mortality. The truck empties all barrels at the back of each lay house into the side dump trailer and then brings the mortality to the HFF Protein Plant, located at 7909 S 331st Avenue, Tonopah, AZ, 8535, where it is processed daily.

22. [redacted]

[redacted]

Disposal and Pest Control

28. Disposal Plan

Designated landfill: Southwest Regional Landfill

24427 AZ-85, Buckeye, AZ 85326, (623) 393 – 0085

Route to be taken to the landfill:

- Exit Tonopah facility through exit gate and head East on Indian School road toward 411th avenue
- Turn left onto 411th avenue, continue for a quarter of a mile and then bear right on to the I-10 East entrance ramp
- Follow I-10 E to AZ-85S/Phoenix bypass route. Take exit 112 from I-10E
- Follow AZ-85S/Phoenix bypass route to destination

High risk materials shall include items such as, but not limited to, dead birds, unmarketable eggs, disposable equipment, sampling supplies, soiled litter, manure, and used PPE.

High risk materials will be specifically dealt with as follows:

- **Animal Products (eggs) and egg spillage:** Spoiled or wasted eggs are discarded in the manure storage area.
- **Dead animals**: Dead birds will be hauled to the HFF Protein plant, located at 7909 S. 331st avenue, Tonopah AZ. If the protein plant is at capacity, or in the case of an FAD, dead birds will be brought to **Southwest Regional Landfill** using a company truck. (With appropriate permit)
- **Live animals found outside aviary houses:** Poultry that escape containment present a disease risk, as they may commingle with unmonitored avian population. These birds are euthanized and included with mortality.
- **Manure:** Used manure is hauled off site as permitted. Storage capacity exists for 2 weeks as needed.
- **Disposable equipment, sampling supplies, and used PPE:**
  a. Used disposable PPE will be discarded into lined, plastic trash bins located at perimeter access points/internal LOS access points.
  b. Disposable equipment and sampling supplies will be discarded into lined, lidded plastic trash bins located away from animal housing areas.
  c. All waste materials will be double-bagged and sealed prior to placement in the garbage dumpster.
  d. The trash dumpster is located outside the perimeter in the designated waste transfer area.
  e. Disposal containers will not leave the premises.

The premises has the ability to store disposed items for a minimum of 72 hours in the case of movement delays and can store high risk materials (not including dead animals) for 8-10 weeks and dead animals for 3-5 days.

Exhibit 2

United States Department of Agriculture

Natural Resources Conservation Service
Conservation Practice Standard

Emergency Animal Mortality Management

Code 368

July 2022

Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

EMERGENCY ANIMAL MORTALITY MANAGEMENT

CODE 368

(no)

DEFINITION

A means or method for the management of animal carcasses from catastrophic mortality events.

PURPOSE

This practice is used to accomplish one or more of the following purposes:

- Reduce impacts to surface water and ground water including downstrean drinking water sources
- Reduce the impact of odors
- Decrease the spread of pathogens

CONDITIONS WHERE PRACTICE APPLIES

This standard applies to animal operations where a catastrophic event results in the need to manage animal carcasses.

This standard may not apply to catastrophic mortality resulting from disease. In cases of disease-related catastrophic mortality, this standard is applicable only when the appropriate State or Federal authority (typically the State veterinarian or USDA Animal and Plant Health Inspection Service (APHIS)) approves the use of the methods in this standard.

This standard does not apply when animal carcasses are contaminated with hazardous waste, potentially hazardous or radioactive material.

This standard does not apply to routine animal mortality. For routine animal mortality, use NRCS Conservation Practice Standard (CPS) Animal Mortality Facility (Code 316).

CRITERIA

General Criteria Applicable to All Purposes

Plan, design, and construct this practice to comply with all Federal, State, Tribal, and local regulations. The landowner must obtain all necessary permissions from regulatory agencies or document that no permits are required. The landowner and contractor are responsible for locating all buried utilities in the project area, including drainage tile and other structural measures.

Address biosecurity concerns in all aspects of planning, installation, operation, and maintenance of a catastrophic animal mortality operation. Provide warning signs, fences, refrigeration unit locks, and other devices, as appropriate, to ensure the safety of humans and livestock. Include provisions in the design for closing or removing temporary components of the emergency mortality management operation, where required.

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Plan for the maximum size animals that might be dealt with and in conjunction with a complete depopulation schedule for the facility. In lieu of more site-specific data, use the following animal carcass densities.

Table 1. Animal Densities

Animal	Density[1] pounds per cubic foot
Beef cattle	60
Dairy cattle	62
Horse	60
Poultry	60
Sheep	65
Swine	60
[1] Data source: NRAES-54. On-farm Composting Handook, table 7.4.	

Onsite Disposal

Location

Choose the location of onsite mortality management activities using the following criteria:

- The prevailing winds and landscape elements minimize odors and protect visual resources.
- Down-gradient from springs or wells, where possible, or take steps necessary to prevent ground water contamination.
- Above the 100-year floodplain elevation unless site restrictions require location within the floodplain and the management operations located within the floodplain are portable and can be quickly relocated if it becomes necessary (i.e., loading site for transportation to offsite disposal location).
- Where runoff from the 25-year, 24-hour storm can be diverted around the site.
- Where ingress and egress for mortality management will not interfere with other travel patterns on the farm, such as livestock pathways, feed lanes, and other ongoing daily activities.
- Where a minimum of 2 feet between the bottom of the mortality management site and the seasonal high water table can be achieved unless special design features are incorporated that address seepage.
- Follow State regulations for required distances away from streams, lakes, deep wells, residences, drains, and other sensitive features, as applicable.

Refer to applicable soil interpretations found in the “Disaster Recovery Planning” category under “Soil Suitabilities and Limitations for Use” in the Web Soil Survey (https://websoilsurvey.nrcs.usda.gov/app/) as an initial screening tool to identify areas that are likely to be most suitable for this practice. If a suitable location cannot be found on the farm for onsite disposal, use an offsite disposal method.

Use the criteria in NRCS CPS Critical Area Planting (Code 342) to revegetate all areas disturbed by mortality management activities, as applicable.

Burial pit or trench

General

Bury catastrophic mortality onsite or as otherwise directed by State and local regulatory agencies. More than one pit/trench (pit) may be required. When possible, time the burial of catastrophic mortality to minimize the effects of mortality carcass expansion during the early stages of the decay process. Where possible and permitted by State law, leave large animal mortality uncovered or lightly covered until bloating has occurred, or use methods to reduce or vent thoracic and abdominal cavities to eliminate bloating. Retain topsoil to regrade the disposal site after the ground has settled as the decay process is completed.

Remove or render inoperable all field drainage tile (subsurface drains) within the operational area of the burial pit.

Soil suitability
Perform an onsite soils investigation to determine the suitability of the site for a burial pit. Locate burial pits on soils that do not flood and that do not have a water table within 2 feet of the bottom of the burial pit. Avoid areas that have the presence of hard bedrock, bedrock crevices, or highly permeable strata at or directly below the proposed pit bottom. These sites are unacceptable because of the potential pollution of ground water.

Seepage control
Where seepage will create a potential water quality problem, provide a liner that meets the requirements of the NRCS National Engineering Handbook (NEH) (Title 210), Part 651, Chapter 10, Appendix 10D, "Design and Construction Guidelines for Waste Impoundments Lined with Clay or Amendment-treated Soil," or other acceptable liner technology.

Size and capacity
Size the pits to accommodate the catastrophic mortality using appropriate weight to volume conversions shown in table 1. Construct the pit bottoms to be relatively level. Soil suitability and slope may limit the length of the pit. Separate multiple pits by a minimum of 3 feet of undisturbed or compacted soil. Place a minimum of 2 feet of cover over the mortality. Provide a finished grade for the burial site that is above natural ground elevation to accommodate settling and to reduce ponding from precipitation events. Divert runoff from burial location.

Burial trench safety
Use excavation techniques that are Occupational Safety and Health Administration (OSHA) compliant. For pits that are 4–5 feet deep, provide a step or bench 18 inches wide and 1 foot deep dug around the perimeter of the main pit so that the remaining vertical wall will not exceed 4 feet. For pits greater than 5 feet deep, provide earthen walls that are sloped at 2 horizontal and 1 vertical or flatter. Use barriers to keep vehicular traffic at least 4 feet from the edge of the pit. Keep equipment, animal carcasses, stockpiled soil, and other materials a minimum of 2 feet from the edge of the burial pit.

Composting
If composting mortality is planned, refer to NRCS 210-NEH, Part 637, Chapter 2, "Composting," and Part 651, Chapter 10-651.1007, "Mortality Management" design requirements.

Plan for the needed amount and type of carbonaceous material required to facilitate the composting action.

Protect composting mortality from precipitation as necessary or provide an appropriate filter area or means for collecting contaminated runoff. Cover dead animals in static piles or windrows with a minimum of 18 inches of sawdust, finished compost, or other carbonaceous material to discourage scavenging animals and minimize odors. Do not protect the piles or windrows from precipitation or scavengers by covering with an impervious material as air exchange and oxygen are needed to fuel the composting action.

Incinerators and gasifiers
General
Use type 4 (human and animal remains) incinerators approved for use within the State. Gasification (a high temperature method of vaporizing biomass without direct flame but with oxidation of the fumes in an after-burning chamber) must meet all applicable State air quality and emissions requirements.

Capacity
Base the minimum incinerator or gasifier capacity on the average weight of animals times the number of animals in the event. Refrigeration units may be necessary in conjunction with incinerators and gasifiers to improve the loading cycle and fuel use efficiency of the incineration or gasification unit.

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Open-air burning
Open-air burning involves combustion of waste at high temperatures, converting the waste into heat, gaseous emissions, and ash. The gaseous emissions are vented directly into the atmosphere in the human breathing zone without passing through a stack or chimney.

Open-air burning operations are strictly regulated, usually by State and/or local officials. A permit is usually required to perform open-air burning, if it is allowed at all.

Open-air burning includes burning carcasses in open fields and on combustible open heaps, or pyres, or air curtain destructors. Burning must take place as far away as possible from the public. Local conditions and circumstances may determine if this is a feasible disposal option to choose.

On-farm preprocessing may be required prior to open-air burning. Preprocessing could include the grinding of carcasses that can be transported in sealed containers or subjected to fermentation or freezing. However, grinding or shredding of carcasses infected with an infectious disease such as highly pathogenic avian influenza (HPAI) is not recommended because of the risk of aerosolizing the virus.

Use NRCS CPS Critical Area Planting (Code 342) to revegetate all areas disturbed by burning operations.

Temporary mortality storage with refrigeration units
General
Catastrophic mortality may be held in refrigeration units prior to disposal. Because of the large number of dead animals normally encountered in a catastrophic mortality situation, if refrigeration is used, it is likely that multiple units will be needed. Use refrigeration units with a construction compatible with the mechanism to be used to empty the refrigeration unit. Where necessary, provide protection for the refrigeration unit from precipitation and direct sun.

The refrigeration unit design, construction, power source, and unit installation will be in accordance with manufacturer's recommendations. Refrigeration units will be constructed of durable material and leakproof.

Place refrigeration units on a pad of suitable strength to withstand loads imposed by vehicular traffic used to load or remove mortality from the unit.

Temperature
The refrigeration units will be self-contained units designed to freeze animal carcasses before decomposition occurs. Maintain carcasses to be rendered between 22–26°F. Carcasses that will be composted, incinerated, gasified, or burned should be stored a few degrees above freezing to facilitate burning and to reduce the composting time or amount of fuel needed to incinerate or gasify the carcasses.

Capacity
Size the refrigeration units to accommodate the volume of mortality. When calculating the volume required, use the number of dead animals, the average weight of the animal, and a conversion factor for weight to volume.

Power Source
Provide an adequate source of power for cooling or freezing carcasses or both.

Offsite Disposal
In some instances, onsite disposal of all or a portion of the mortality may not be practical. In these instances, transportation and disposal by a third party at an offsite facility will be necessary. Tipping fees for offsite services will be required.

Transportation
Truck beds, trailers, dumpsters, etc. used to transport mortality to another location for disposal will be leakproof, tarped, and covered. Farmer and contractor will comply with all requirements established by local and Federal regulatory agencies.

Rendering
Rendering animal mortalities involves conversion of carcasses into three end products—carcass meal, melted fat or tallow, and water—using mechanical processes (e.g., grinding, mixing, pressing, decanting, and separating), thermal processes (e.g., cooking, evaporating, and drying), and chemical processes (e.g., solvent extraction). When the proper processing conditions are achieved the final product is free of pathogenic bacteria and unpleasant odors.

In an outbreak of disease such as foot and mouth disease, transport and travel restrictions may make it impossible for rendering plants to obtain material from traditional sources within a quarantine area. Additionally, animals killed because of a natural disaster, such as a hurricane, might not be accessible before they decompose to the point that they cannot be transported to a rendering facility and must be disposed of onsite.

Use of some pharmaceuticals may eliminate rendering as a option, due to residual of some drugs in the end products. Producers should contact renderer on what to avoid.

Collect and transfer animal mortalities in a hygienically safe manner according to State and local rules and regulations.

Landfill
Use Subtitle D landfill sites for animal carcass disposal. State and local governments will have reviewed approved Subtitle D landfill sites, and the necessary environmental protection measures will be preexisting; therefore, landfills represent a disposal option that generally poses little risk to the environment.

Modern Resource Conservation and Recovery Act Subtitle D landfills are highly regulated operations, engineered and built with technically complex systems specifically designed to protect the environment. The environmental protection systems of a Subtitle D landfill are generally more robust than those small, arid, or remote landfills that meet U.S. Environmental Protection Agency (EPA) criteria for exemption from environmental protection systems. Subtitle D landfills would likely be less prone to failure following high organic loading from the disposal of large quantities of carcass material than those exempt from EPA criteria.

In many States disposal of animal carcasses in Subtitle D landfills is an allowed option. However, it is not necessarily an available option as individual landfill operators generally decide whether to accept carcass material.

Producers should verify with individual landfill operators to determine availability for a particular event and for any requirements to utilize the landfill. Some landfills may require bagging of carcasses for disposal. During an emergency or instance of catastrophic loss, time is often very limited; therefore, landfills offer the advantage of infrastructures for waste disposal that are preexisting and immediately available. Furthermore, the quantity of carcass material that can be disposed of in landfills can be relatively large.

CONSIDERATIONS

Major considerations in planning emergency animal mortality management include—

- Available equipment and land application area at the operation.
- The management capabilities of the operator.
- The emotional impact on the producer caused by the mortality losses.
- The degree of pollution control required by State and local agencies.

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- Effects on wildlife and domestic animals.
- The economics of the available alternatives.
- Effects on neighbors (aesthetic, odors, traffic on public roads).

Consider taking measures to maintain appropriate visual resources, reduce odor, and provide dust control. Measures may include use of existing vegetative screens and topography to shield the catastrophic animal mortality disposal from public view, to reduce odors, and to minimize visual impact.

An alternative to prevent bloating of catastrophic mortality includes opening animal thoracic and abdominal cavities and viscera prior to placing the required cover.

Consider using the applicable operating procedures described in USDA Animal and Plant Health Inspection Service "Emergency Carcass Management, Desk Reference Guide."

State requirements for recordkeeping vary. State or local regulations may require recording items such as burial site location, type and quantity of mortality, burial date, photographs documenting the burial process, and other pertinent details.

PLANS AND SPECIFICATIONS

Prepare plans and specifications for emergency animal mortality management to comply with this standard and that describe the requirements for applying this practice to achieve its intended purpose. As a minimum, include—

- Contact information for State authorities since they may have specific requirements dependent upon cause of death, animal species, and housing.
- Amount, type, and weight of mortality.
- Layout and location of on-farm mortality management activities.
- Number, capacity, and type of on-farm disposal methods.
- Grading plan showing excavation and fill. Include drainage features, as appropriate.
- Soil and foundation findings, interpretations, and reports, as appropriate.
- Requirements for onsite disposal (i.e., composting, burial, etc.) and quantity of materials, as appropriate.
- Structural details of all components, as appropriate.
- Vegetative requirements for preventing erosion, as appropriate.
- Odor management or odor minimization requirement.
- Name, location, and contact information for the selected offsite transportation and disposal facility if offsite disposal, such as rendering or landfilling, will be used.

OPERATION AND MAINTENANCE

Prepare an operation and maintenance plan specific to the facilities installed for use by the landowner or operator responsible for operation and maintenance. The plan should provide specific instructions for operating and maintaining facilities to ensure they function properly. At a minimum, address—

- Specific instructions for proper operation and maintenance of each component of this practice. Detail the level of inspection and repairs needed to maintain the effectiveness and useful life of the practice.
- Safety considerations.
- Biosecurity concerns in all aspects of installation, operation, and maintenance.
- Contact(s) and phone numbers of person(s) to contact for catastrophic losses (figure 1).
- Maintaining recordkeeping of number, average weight, cause, and date of animal deaths.
- Method and procedures of catastrophic mortality disposal.

- Periodic inspections of disposal sites, as appropriate.
- Prompt repair or replacement of damaged components, as appropriate.
- Site references and/or manufacturer or installer for trouble shooting mechanical equipment, as appropriate.

Additional Operation and Maintenance for Burial

- Inspect after significant storm events and at least twice a year to identify maintenance needs.
- Inspect burial site for settlement and cracks in soil cover. Maintain at least 2 feet of soil cover as final cover over carcasses. Add soil and regrade the carcass burial site as decay and settlement occur.
- Regrade area if runoff is flowing onto the location of the burial site.
- Promptly repair and revegetate bare spots and eroded areas. Apply fertilizer and lime as appropriate to maintain vigorous vegetation.
- Inspect for damage from rodents or burrowing animals. Repair any damage and take appropriate corrective actions to prevent further damage.
- In areas where animal encroachment is excessive, install a barrier (temporary fence) around the burial site to protect against scavengers such as bears, coyotes, etc., or add additional cover.
- When the site can be returned to use, remove and properly dispose of fencing materials, if used. Level the land to original grade.

Additional Operation and Maintenance for Composting

- Identify operational information and equipment that will need to be readily available.
- Locate, as soon as practical, a source for carbonaceous material sufficient to provide for the catastrophic event.
- Include a recipe of ingredients that gives the layering or mixing sequence.
- Provide maximum and minimum temperatures for operation, land application rates, moisture level, management of odors, testing, etc.
- Become familiar with composting methods and procedures as soon as practical.
- Instructions for monitoring temperature and moisture, and how to adjust as necessary to ensure that the compost operation is proceeding as planned.
- Instructions for turning the pile as appropriate.
- In areas where animal encroachment is excessive, install a barrier (temporary fence) around the burial site to protect against scavengers such as bears, coyotes, etc., or add additional cover.
- When the site can be returned to use—
  - Remove and properly dispose of fencing materials, if used.
  - Collect any bones remaining on the soil surface and disposed of them properly.
  - Level the land to original grade.
- Instructions for properly utilizing the finished compost.

Additional Operation and Maintenance for Incinerators and Gasifiers

- Operate units properly to maximize efficiency of disposal and minimize emission problems.
- Load the units according to the manufacturer's recommendations.
- Remove ashes frequently to maximize combustion and prevent damage to equipment. Include methods for collecting and disposing of the ash material remaining after incineration. Plan for ash weight of up to 20 percent of carcass weight.

Additional Operation and Maintenance for Refrigeration Units

- Load the refrigeration unit according to manufacturer's recommendations and do not exceed the

design capacity.

- Inspect the refrigeration unit periodically for leaks, structural integrity, and temperature.

Figure 1. Emergency Mortality Response Contacts and Farm Information

EMERGENCY MORTALITY RESPONSE
Emergency Contacts and Farm Information

Plan Date:	
Farm Name:	
Owner/Operator:	
County:	
Physical Address of Facility:	
Directions to Facility:	
Emergency Contacts	
Local Veterinarian:	
On-Call Veterinarian:	
Integrator	
Other:	
Local Emergency Number:	
List of Agencies to notify within 24 hours	
State Animal Health Agency:	
State Veterinarian:	
Federal Area Veterinarian in Charge:	
Heavy Equipment Contractor	
for handling carcasses:	
for excavating burial pits:	
Composting Material Supplier:	
Incinerator:	
Landfill:	
Rendering Facility:	
Other (specify):	

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Exhibit 3

Emergency Mortalities at Hickman Family Farms

With Notes from Literature

by

Albert J. Heber, Ph.D., P.E.

July 2, 2025

Emergency Mortalities at Hickman Family Farms
With Notes from Literature
By Albert J. Heber, Ph.D., P.E.
July 2, 2025

Introduction

An emergency poultry carcass disposal operation was carried out by Hickman's Family Farms (HFF), at 41717 Indian School Road, Tonopah, AZ due to an outbreak of the Avian bird flu (Dana, 2025). The strain H5N1 of avian influenza is the most lethal variation and is known to be transmissible to humans (Kim and Kim, 2012).

Over 2 million chickens were buried in trenches at their Tonopah site with the oversight of the ADEQ (Director Karen Peters), who provided HFF with a temporary emergency waiver and will assure that groundwater is protected by assessing the area's hydrology and geology, even though she claimed that there is no current risk to the aquifer. Therefore, the impact studies will be done afterwards, rather than prior to the burial operation (Dana, June 20, 2025).

Background

There are increasing concerns worldwide about the negative environmental impacts of the burial method used for mass depopulations of animals and birds (Avidov et al., 2023; Flory et al., 2017; Glanville et al., 2009).

Ritter and Chirnside (1995) warned about the impact of poultry carcass burials on ground water quality and called for regulations that require a soil survey by a certified soil scientist prior to subsurface disposal, especially for large amounts of carcasses.

EPA warns that the burial of livestock mortalities can lead to groundwater contamination. Bodily fluids and hazardous gases can impact "health and safety of surrounding humans, livestock and wildlife" (Dana and Simchuk, 2025). Thus, the residents are concerned about their drinking water which comes from wells that are less than 150 ft deep. The trenches were located near local residences, like the home of Liinda Butler.

After first saying that the chickens would go to a landfill, the Department of Agriculture informed the public that the birds at Tonopah will be buried at the site (Dana and Simchuk, 2025). Neighbors have not been given information about the process, not from Hickman's nor the state agencies. Burial is not the top method of carcass disposal as it is less preferred than composting and landfill.

Glenn Hickman equated the mass burial of chicken carcasses to cemetaries and septic systems in terms of contamination and said the number of chickens made no difference

(Dana, 2025). This is a dismissive statement that is not based on facts. His statement that "There's always going to be concerns" is also dismissive.

Karen Peters' claim that the aquifer is fine prior to any testing is basically "hoping for the best". What is the plan if the tests show contamination? (Dana, 2025) This question was answered in a nomination hearing on June 26 (McDaniel, 2025). If the burial of 2 million chickens prior to the pivoting decision to instead require landfilling causes groundwater contamination, then the aquifer will need to be pumped and treated. Members of the public and of the committee believed that the decision to allow burial without a liner exhibited poor judgement.

The Sheldon Jones' statement about a biosecurity plan implies that perhaps it would obviate the need for an emergency mortality plan (Dana, 2025), which it does not.

Best Management Practices in the Literature

Disposal of dead animals needs to be done within 72 hours in a way that prevents contamination of water and public health hazards (Texas, 2005). Texas (2005) provides a comprehensive list of factors to be evaluated at a burial site during the planning process. It includes soil properties, vertical proximity to bedrock and the water table, horizontal proximity to water bodies and public areas, and setbacks to residences and public areas. Local NRCS offices maintain a soil map for suitability for burial. The map will be divided into soil mapping units.

The location should be above the 100-year floodplain elevation, should allow runoff to be diverted, and should have proper setbacks from surface water, deep wells, residences, drains, etc. (USDA, 2022). Texas (2005) gave minimum setbacks of 50-200 ft from residential property, 150 ft from private well, springs, streams, public areas, and 500 ft from a public well. Surface runoff must not enter the pit.

Texas (2005) recommends that poultry carcasses should be placed in layers not more than 1 ft thick and each covered with 1 ft of soil. The burial site should be mounded with at least two ft of soil, and subsiding soil (Figure 5. Burial sites showing settling of soil.Figure 5) should be replaced with new soil.

Texas (2005) stated that local NRCS offices can provide soil maps with suitability criteria for burying animal mortalities in three classes: 1) not limited, 2) somewhat limited, and 3) very limited. The suitability maps should be used as a preliminary planning tool.

The burial should be timed to minimize the effects of carcass expansion. If permitted, the pit should be uncovered until bloating is completed. Topsoil should be retained to regrade the ground. The pit should not be located in the flood plain. Areas with hard bedrock and

other hard surfaces should be avoided (USDA, 2022). Seepage of leachate must be controlled if there is potential for water contamination. Mortalities should be with at least 2 feet of soil. Pit bottoms must be level and 2 or more feet above the water table. However, Kim and Kim (2012) specified a 6 to 12 ft distance above the water table.

The main problem with the burial method is the migration of leachate formed by carcass decomposition to water resources (Kim and Kim, 2012). The release of leachate, which is slowly released to external environments, is a bigger problem when large numbers of carcasses are buried in a short period of time.

The burial site must be regularly inspected for improper cover, settlement and cracks, improper runoff flow, bare spots and erosion, and rodent and animal damage, all which can develop over time.

Records of the operational details and the emergency mortality response should be kept and provided (USDA, 2022).

Kim and Kim (2012) conducted a review with the express purpose of characterizing the potential microbial contaminants expected to be found in the groundwater around mortality burial pits in Korea where 24 million birds were culled from 2003 to 2011, and 6 million birds were slaughtered and buried in 216 burial pits in 2011. They noted that the burial sites constructed in Korea often had large numbers of carcasses buried without serious consideration of hydrogeologic settings, and may serve as large sources of contamination, which in turn may possibly contaminate the groundwater. This is apparently the same scenario that occurred at Hickman's Family Farms.

It was noted in Kim and Kim (2012) that the complete decay of the buried carcasses may take two years or more, and that contaminants are released until carcass decay is completed. Korean law dictates that monitoring be conducted for two years following burial (Kim and Kim, 2012).

Kim and Pramanik (2016) presented a comprehensive set of procedures and methods for environmental management of burial sites used to control outbreaks of Avian influenza and foot-and-mouth disease. Required measures include leachate wells, gas exhaust, liners, application of lime layers, and monitoring wells. The burial protocol at Hickmans apparently fell far short of these measures.

Contamination Parameters

Flory et al (2017), citing a U.K. study, stated that burial ranked as the highest risk disposal method. Potential hazards include campylobacter, *Escherichia coli*, *Listeria*, *Salmonella B*, anthracis, *Cryptosporidium*, Giardia, *Clostridium tetani*, *Clostridium botulinum*,

Leptospira, *Mycobacterium*, tuberculosis v. bovis, *Yersinia*, and hydrogen sulfide. Kim and Kim (2012) identified 4 pathogenic bacteria (*Salmonella typhimurium, S. enteritidies, Bacillus cereus, Clostridium perfringens*) that existed in groundwater contaminated by calf burial. The quantification of coliform bacteria is often used as a surrogate for these disease agents (Kim and Kim, 2012).

Proteolytic and lipolytic bacteria are two important groups of bacteria that participate in carcass decomposition (Kim and Kim, 2012). The most commonly observed proteolytic bacteria are *Enterococcus faecalis, E. gallinarum, Proteus,* and the *Pseudomonas* species.

Other contaminants to be tested are concentrations of ammonium, ammonia, nitrate, nitrogen, phosphorus (Flory et al., 2017), and biochemical oxygen demand (BOD), total dissolved solids (TDS) and chloride (Kim and Kim, 2012).

In the case of burial of chickens because of an avian influenza (AI) virus outbreak, leachate monitoring of the virus itself should be monitored to make sure the virus is contained and not moving off site (Kim and Pramanik, 2016).

The monitoring around Hickmans should provide concentrations of the following concentrations:

Avian Influenza virus
BOD
TDS
Chloride
Ammonium
Ammonia
Nitrogen
Nitrates
Phosphorus
Proteolytic bacteria
Lipolytic bacteria
Pathogenic bacteria (*Salmonella*, *E. Coli*, etc.)
Total coliform bacteria

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Figure 1. Burial site photo taken with drone from the north.

Figure 2. Hickmans layer houses at Tonopah. Dust cloud from burial site is visible in upper right corner of the photo.

Figure 3. Burial pit construction.

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Figure 4. Manure conveyors used to load carcasses into trucks.

Figure 5. Burial sites showing settling of soil.

Figure 6. Deep trenches used for burial of mass depopulation mortalities.

Figure 7. Google Earth image showing the burial pit location represented by the red line west of the laying hen houses.

Exhibit 4

Tonopah Egg Production Plant Fire

April 4, 2019

Exhibit 5

Arlington Egg Production Plant Fire

March 6, 2021

(Photo from Buckeye Gazette, March 6, 2021)

Exhibit 6

Tonopah Egg Production Plant Fire

July 7, 2024

Exhibit 7

Photos of Red Water Discharge

from

Tonopah Egg Production Facility Lagoons

February 10, 2023