

January 17, 2020

TO: Department of Natural Resources

Re: Hog Confinement Operation in northwest Livingston County MO To be built by United Hog System

Proposed location: Section 8, Township 59N, Range 24W, Livingston CO,MO

RECEIVED
FEB 06 2020
Water Protection Program

Dear Members of DNR;

We are opposed to the potential Hog confinement operation being located in our neighborhood.

I own property that borders the proposed location of the above mentioned hog confinement operation. I am a cattle farmer and pasture my cattle on this property, My cattle are dependent on water from creeks and ponds located on my property,

These ponds and creeks are fed by runoff from creeks that run through the property of the proposed site.

This property is also in a flood plain, runoff flows directly into the river located very near this location- less than a mile.

We are concerned about leaching to groundwater where it may degrade water quality. Contamination caused by runoff can be chemical – nitrates and phosphates – and/or biological – bacteria, viruses and parasites.

With last years flooding, the river continues to eat away at property on our side of the river, in this location. There used to be property separating us and the river- including a road. That property and road no longer exist and the river is now eating away at my property- in the direction of this proposed site.

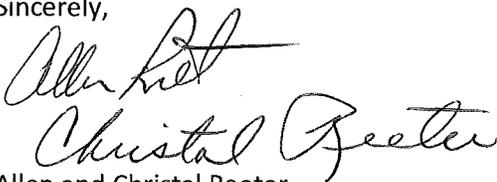
Last year flooding and raised river levels from numerous rain events, took an enormous amount of runoff water into the river.

We had redone the pond on our property- a rather large pond. It was finished on a Tuesday and one heavy rainfall completely filled the pond and the pond was over flowing by that following Thursday. This runoff that filled the pond, ran through the proposed property site. The dangers this site could cause tome personally and to anyone in the area is of GREAT concern.

We want to be heard and request a public hearing on the matter.

You may contact us at 660-646-9069 or 660-646-7204, Allen and Christal Reeter.

Sincerely,



Allen and Christal Reeter

3167 LIV 531

Chillicothe, MO 64601

660-646-9069

RECEIVED

FEB 13 2020

Water Protection Program

January 31, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

We are requesting a public hearing for review of this matter.

Sincerely,

Paul & Patricia Skisne

Wray, Gorden

From: DNR.CAFO
Sent: Wednesday, March 4, 2020 9:03 AM
To: Wray, Gorden
Subject: FW: Oppose CAFO in Livingston County

Follow Up Flag: Follow up
Flag Status: Flagged

From: Anita Coult <anitacoult@gmail.com>
Sent: Monday, March 2, 2020 2:11 PM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: Oppose CAFO in Livingston County

To Whom It May Concern:
Re: CAFO Application GS10606 by Z8Sow Farm
Site Location Section 8, Township 59N, Range 24 W in Livingston County

I oppose granting this CAFO a permit.
I request a hearing by MDNR before granting a permit.
A hearing is requested for the following reasons:

- The CAFO will be built just outside the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams.
- Due to the bottleneck and levee structure in this section of the river, the area is very prone to flooding and high saturation for long periods of time.
- Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields.
- Conditions in CAFOS breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community.
- Air emissions and water contamination threaten the health and future of established organic farmers in the area, as well as Poosey Conservation Area, just 3.5 miles to the west.

I look forward to a hearing.

Anita Coult
660-646-1185
anitacoult@gmail.com

RE: CAFO Application GS10606 by Z 8 Sow Farm

Site location Section 8, Township 59N, Range 24 W in Livingston County

I oppose granting this CAFO permit and request a public hearing.

A hearing is requested for the following reasons:

- The CAFO will be built just outside the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams.
- Due to the bottleneck and levee structure in this section of the river, the area is very prone to flooding and high saturation for long periods of time.
- We have a “shrink-swell” soil issue.
- Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields.
- The waste (the major issue) exported to nearby farm fields will not be regulated the same on those export farms.
- Conditions in CAFOS breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community.
- Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 2.5 miles to the west.
- The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation and an annual Tour of Poosey.
- Property values have been shown to decrease by up to 88% for properties adjacent to CAFOS, and can even be impacted for up to 7 miles surrounding the operation.
- County roads will face significant wear from heavy truckloads hauling hogs and feed.
- The air quality won't be regulated.

I look forward to a hearing.

Brent Kline

660 247 5462 cell

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
2020 MAR 11 AM 11:51
AIR POLLUTION
CONTROL PGM

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,

Candie Skipper
9807 LIV 529
Chillicothe, MO 64601

Candie Skipper

RECEIVED

MAR 18 2020

Water Protection Program

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 03 2020
Water Protection Program

To whom it may concern:

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We are requesting a public hearing for review of this matter.

Sincerely,

Catherine L. Crawford



Greg P. Crawford
Cathy L. Crawford
3343 Liv 500
Jamesport MO 64648-9201

Wray, Gorden

From: DNR.CAFO
Sent: Tuesday, February 25, 2020 8:47 AM
To: Wray, Gorden
Subject: FW: CAFO application #G510606Z8 FARM SITE: Section 8, Township 59N 24W Livingston CO MO

Follow Up Flag: Follow up
Flag Status: Flagged

Heather Peters
Missouri Department of Natural Resources
Water Protection Program
Operating Permits Section, Industrial Permits Unit
(573) 526-5449

From: Christal Reeter <chrisreeter@gmail.com>
Sent: Tuesday, February 25, 2020 8:30 AM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: CAFO application #G510606Z8 FARM SITE: Section 8, Township 59N 24W Livingston CO MO

MISSOURI DEPARTMENT OF NATURAL RESOURCES

P.O. BOX 176

JEFFERSON CITY, MO 65102-0176

RE: CAFO Application #G510606Z8

Farm site location: Section 8, township 59N 24W Livingston CO MO

Dear DNR:

I write in regards to the proposed site named above.

I, as a property owner, have serious concerns. This site borders my property on my west and north boundaries. My property is bordered on the east by the river which has progressively eaten away timber and crop land that used to border me on the east. There are several ditches that run all the way through my property from this proposed site and straight into the river, carrying runoff.

In addition, there are underground streams that run through my property and I feel certain those streams are shared with this property, as we have a live well very near that northwest property corner.

My cattle are dependent on the water supplied by those underground streams that feed two ponds on my property.

I have great concern for the potential dangers of the water becoming contaminated and or used up by an operation of such great size.

The soil content of this land is extremely poor and does not hold well together, which causes much erosion regardless of the thick timber on our side and the terracing and tiling on their side.

I would like to invite you here to tour my property so you can visually see why this is not a good location for any confinement operation. It does not matter if they are applying the manure by injection into the soil or spreading it on top- the runoff will have a large impact and effect on my property and my cattle.

I am opposed to this site location and request a hearing.

Please call me to set up a time for a tour of y property.

Sincerely,

Christal Reeter

3167 LIV 531

Chillicothe, MO 64601

Sent from [Mail](#) for Windows 10

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

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We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

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We are requesting a public hearing for review of this matter.

Sincerely,

Charles Y. Ruffe

24353 320th St

Jamesport MO 64648

RECEIVED
MAR 09 2020
Water Protection Program

February 28, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED

MAR 12 2020

Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just ~~South~~ ^{North} of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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We are requesting a public hearing for review of this matter.

Sincerely,

Chris Rapp

January 29, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

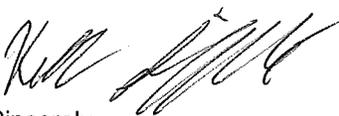
RECEIVED
FEB 04 2020
Water Protection Program

Dear Sir or Madam:

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Sincerely,

I would like a public hearing to discuss this matter

RECEIVED

FEB 11 2020

January 29, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Water Protection Program

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Sincerely,

A handwritten signature in black ink, appearing to be "John J. [unclear]", written over a horizontal line.

RECEIVED

FEB 19 2020

January 31, 2020

Operating Permit Section

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

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We are requesting a public hearing for review of this matter.

Sincerely,



RE: CAFO Applications GS10606
by Z & SOW Farm

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 10 2020
Water Protection Program

To whom it may concern:

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We are requesting a public hearing for review of this matter.

Sincerely,

Alan Klene

RE: CAFO Application G510606
by Z 8 Sow Farm

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

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RECEIVED
MAR 10 2020
Water Protection Program

RE: CAFO Application 6510606
by Z & Sow Farm

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

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We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED
MAR 10 2020

Water Protection Program

RE: CAFO Application 6510606
by Z 8 Sow Farm

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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Sincerely,



RECEIVED

MAR 10 2020

Water Protection Program

February 20, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 11 2020
Water Protection Program

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RE: CAFO Application GS 10606 by
Z & Sow Farm

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

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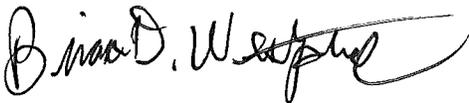
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RECEIVED
MAR 10 2020
Water Protection Program

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Jefferson City, MO 65102

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RECEIVED
MAR 10 2020
Water Protection Program

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Missouri Department of Natural Resources

P. O. Box 176

Jefferson City, MO 65102

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We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED

MAR 10 2020

Water Protection Program

RE: CAFO Application GS10606

by 28 Sow Farm

Missouri Department of Natural Resources

P. O. Box 176

Jefferson City, MO 65102

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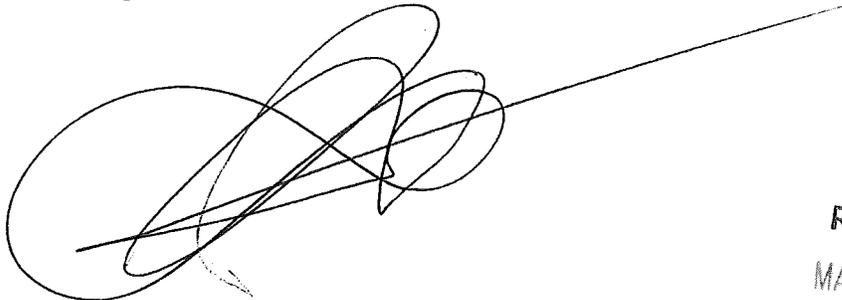
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We are requesting a public hearing for review of this matter.

Sincerely,

A large, stylized handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

RECEIVED

MAR 10 2020

Water Protection Program

February 20, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED

2020 MAR 11 AM 11:52

AIR POLLUTION
CONTROL PGM

Dear Sir or Madam:

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We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED

MAR 13 2020

Water Protection Program

RECEIVED

FEB 10 2020

Water Protection Program

January 31, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

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We are requesting a public hearing for review of this matter.

Sincerely,



Tracy Bradley

February 24, 2020
Environmental Water Protection Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 09 2020
Water Protection Program

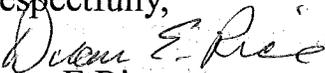
Dear Gorden Wray,

Gorden, I want to take this moment to say that I believe you have an extremely difficult job. To balance the safety of Water Protection against the need for allowing Large Animal Confinement Facilities is not a job I would ever care to have. With this said, as you well know, our home would become surrounded by the manure, (if either CAFO, Trenton Farms or Z-8 Farms would be open for business.) There are suggestions within the application process, but no true regulations for the applying manure once it has left the facility. I would have little to no recourse to take if a neighbor farmer chooses to over apply or apply manure before a forecast of rain or flooding. What is the recommendation of MDNR for a situation which is very likely to occur? How could I take measurements of samples? It's not my property. What penalty or what is in place to protect our ground? What protects our home, our crops, our water? How is an operation that has been called upon by DNR in the past, allowed to come to Northern Missouri and implement their ideal of Hog Farming? Both farmers, are not even from this area. If this is such a great idea why wouldn't a local farmer propose such an operation? This seems like bad business in my minds eye. How can legislation or the DNR regulations be created to provide safety? I'm sure you believe that DNR has too many regulations already, but how do those protect folks who would be greatly impacted? It appears from the outside looking in that the regulations are put in place to protect people who want a CAFO where ever they please.

I am judgmental. That goes without saying. The past 5 years have been a constant worry and countless hours trying to get anyone in authority to hear my fears and help make sense of what appears to be a lack of caring for individuals and all about BIG Corporate Farmers. We won't even add in the cost of just trying to protect ourselves and our community.

Please address these and other matters within a Public Hearing so everyone can understand why MDNR feels granting these applications are a good idea.

Respectfully,


Dean E Rice

193 Plum Lane, Trenton, MO 64683

January 12, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
JAN 27 2020
Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, our quality of life, and the damage to our roadways.

We have lived on this property for the majority of our married lives, 60 years. This farm has been in the Reeter family for generations. We enjoy our rural community and the peace and quite it provides. We both have asthma. The increased dust from traffic on our gravel road will no doubt adversely affect this, as will the gasses/chemicals emitted by large amounts of hog manure and the animal dander in such close proximity to our home.

The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern. My husband has been an avid outdoorsman his entire life and the thought of what a contamination event would do to our local wildlife population is unthinkable. Over the past few years we have finally seen an increase in the number of wild pheasants and eagles in the area. The CAFO would no doubt adversely affect their habitats.

My husband and I built our home here, raised our family here, and now have the pleasure of watching it grow with our grandchildren and great-grandchildren. Our hope is to leave them a legacy our hard work took a lifetime to build and proceeding the placing the hog confinement in this location will have dire consequences on this. What can we do to contest authority for the CAFO to be authorized/licensed? What can the DNR do to either regulate CAFOs in general and this CAFO in particular? Is there anything else we can do to prevent this impending disaster? We will be doing everything in our power to prevent this.

Sincerely,



Delber and Joyce Reeter

March 6, 2020

Department of Natural Resources

Re: CAFO Application GS10606 by Z8Sow Farm
Site Location Section 8, Township 59N, Range 24 W in Livingston County

To Whom It May Concern:

I oppose granting this CAFO a permit. I request a hearing by MDNR before granting a permit. A hearing is requested for the following reasons:

- The CAFO will be built just outside the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams.
- Due to the bottleneck and levee structure in this section of the river, the area is very prone to flooding and high saturation for long periods of time.
- Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields.
- Conditions in CAFOS breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community.
- Air emissions and water contamination threaten the health and future of established organic farmers in the area, as well as Poosey Conservation Area, just 3.5 miles to the west.

I look forward to a hearing.

Sincerely,

Dennis Sturquess

Dennis Sturquess

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 02 2020
Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

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Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely, 



Greg P. Crawford
Cathy L. Crawford
3343 Liv 500
Jamesport MO 64648-9201

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

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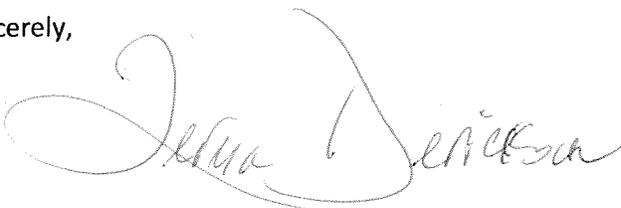
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Sincerely,



RECEIVED
MAR 10 2020
Water Protection Program

RECEIVED

FEB 06 2020

December 31, 2020

Water Protection Program

Missouri Department of Natural Resources
PO Box 176
Jefferson City, MO 65102

Dear Sirs:

I am writing in reference of a proposed Hog confinement wanting to be build in Livingston County. This site is just over the fence of my property and I oppose this operation. The group is United Hog systems.

There are many homes in close proximity to this site and will be negativity effected by the traffic, odor and disruption to their lives let alone the devaluation to their homes and property, mine included!

I hope you consider the impact to all of the neighbors and families and farm values when you consider issuing this permit.

Dinah Sturgeon
1804 Highway W
Trenton, MO 64683

Wray, Gorden

From: DNR.CAFO
Sent: Friday, March 6, 2020 9:14 AM
To: Wray, Gorden
Subject: FW: pubic hearing

Follow Up Flag: Follow up
Flag Status: Flagged

From: Doe Sperry <doesperry08@yahoo.com>
Sent: Thursday, March 5, 2020 11:04 PM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: pubic hearing

Concerning the CAFO application #G510606Z8. Farm site location: Section 8, township 59N 24W, Livingston CO MO
The local water needs to be protected from this proposed CAFO. There are many natural springs that local residents used for drinking water or to keep our ponds and lakes filled. There are so many things wrong with this whole thing. Please protect the quality of our water and our way of life. Thank you.

Dick and Dona Sperry
6360 liv 531
Chillicothe, Mo 64601

March 2, 2020

Gordon Wray
Water Protection Program
Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, Missouri 65102-0176

RECEIVED
MAR 09 2020
Water Protection Program

Dear Mr. Wray:

We oppose the proposed permit for the United Hog Z-8 Sow Farm in Section 8, Township 59N, Range 24W in Livingston County. There are many reasons, including the threat to our already crumbling asphalt, lettered state highways in the area, but we will focus on the environmental impacts.

We are row crop and cattle farmers in the northwest corner of Livingston County. One of the first settlements in the area in the 1830s was Springhill. It was named Springhill because of the abundance of shallow, freshwater springs in the northern Livingston County area. Those springs are still in abundance. Rural public water systems are not available to some of us, and we rely on those fresh water springs for our drinking and personal water and livestock water (We maintain six wells for four households and two livestock waterers). Our concern is not only contamination of the springs and aquifers in the area from the CAFO itself, but also the manure applications that may contaminate springs and wells.

Also, please consider the threat of a falling water table in the area. CAFOs typically don't use the public water system in the area. They dig deep wells and they utilize millions of gallons of water. What kind of effect will that have on area residents' water supply, but also other local communities and towns? Are you comfortable saying this CAFO's water use will not adversely affect neighbors and communities in the area? United Hog System attorney Robert Brundage stated in a public meeting that more CAFOs are wanting to build in Livingston County. How will a proliferation of CAFOs impact our water table in northern Livingston County?

We believe you have received NRCS maps and reports showing soils in the immediate area of the proposed CAFO are poorly suited for the construction and operation of the proposed subsurface containment structures. Please consider and research that cracks in the concrete walls of the proposed manure pits will likely result from the shallow groundwater table, the shrink-swell characteristics of these 'Lock Springs silty clay loam' soils, the depth to the saturation zone, and unstable excavation walls.

And finally please consider the threat to Poosey Conservation Area. Poosey Conservation Area is funded by Missouri tax payers. Thousands of Missourians and even out-of-state residents utilize the 5,863 acre area for hunting, fishing, hiking, bike riding, horseback riding, canoeing, nature watching, tours and much more. It's a place that connects people with the outdoors. Are you willing to potentially sacrifice a Missouri gem, that is highly used by the public, for the odor, noise, pollution and road deterioration a CAFO brings to the area?

We are requesting not only a public hearing for you to hear our concerns, but a thorough investigation of the impact to our water table and Poosey Conservation Area. Regards,

Barbara Doughty

Barbara Doughty

Doug Doughty

Douglas P. Doughty
4787 LIV 503
Chillicothe, MO 64601
660-247-1504

March 7, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 10 2020
Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

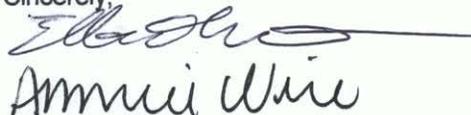
The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

We own livestock, and are concerned about potential ill effects they may suffer as a result of being in close proximity to the CAFO, in part due to the increased fly population that is inevitable when that number of livestock is in one location.

Please review the enclosed information regarding the soil analysis performed on the proposed site and the recommendations by NRCS. The soil type is not suitable for the proposed methods of storing the waste produced by the CAFO, due to the shrink/swell rate and inevitable failure of any subterranean pits.

My husband and I built our home here 8 years ago after purchasing property from my family, who has lived in this area for generations. The thought that my family's health and safety is at risk due to this proposed CAFO is unacceptable. What can we do to contest authority for the CAFO to be authorized/licensed? What can the DNR do to either regulate CAFOs in general and this CAFO in particular? Is there anything else we can do to prevent this impending disaster? We will be doing everything in our power to prevent this.

Sincerely,



Elbert and Ammie Wire

8511 Liv 506
Chillicothe, MO
64601

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Building Site Development

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Dwellings With Basements

Dwellings are single-family houses of three stories or less. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet.



The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification of the soil. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the

Custom Soil Resource Report

Across-slope shape: Convex
Ecological site: Loess Upland Prairie (R109XY002MO)
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: Yes

30157—Locksprings silty clay loam, 9 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2qnsd
Elevation: 680 to 1,500 feet
Mean annual precipitation: 35 to 41 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 177 to 209 days
Farmland classification: Not prime farmland

Map Unit Composition

Locksprings and similar soils: 90 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Locksprings

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from limestone and shale

Typical profile

A - 0 to 7 inches: silty clay loam
Bt - 7 to 28 inches: very bouldery clay
R - 28 to 80 inches: bedrock

Properties and qualities

Slope: 9 to 30 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Map Unit Legend (CAFO Site - Soil Classification)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
10116	Sampsel silty clay loam, 2 to 5 percent slopes	15.9	1.8%
30042	Caleb silt loam, 9 to 14 percent slopes, eroded	25.6	2.8%
30046	Chillicothe silty clay loam, 5 to 9 percent slopes, eroded	17.8	2.0%
30119	Lagonda silty clay loam, 2 to 5 percent slopes, eroded	72.6	8.0%
30120	Lagonda silty clay loam, 5 to 9 percent slopes, eroded	131.6	14.5%
30157	Locksprings silty clay loam, 9 to 30 percent slopes	414.7	45.7%
30220	Weller silt loam, bench, 2 to 7 percent slopes	0.3	0.0%
36038	Tice silt loam, overwash, 0 to 2 percent slopes, frequently flooded	34.0	3.8%
36051	Zook silty clay loam, overwash, 0 to 2 percent slopes, frequently flooded	26.0	2.9%
36060	Carlow silty clay, 0 to 2 percent slopes, frequently flooded	41.8	4.6%
36096	Zook silty clay loam, 1 to 5 percent slopes, frequently flooded	88.5	9.8%
66004	Dockery silt loam, 0 to 2 percent slopes, frequently flooded	37.5	4.1%
Totals for Area of Interest		906.4	100.0%



Map Unit Descriptions (CAFO Site - Soil Classification)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the

Rating Options—Dwellings With Basements (CAFO Site)

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Shallow Excavations



Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of

MAP LEGEND

- Area of Interest (AOI)
 - Area of Interest (AOI) 
 - Background  Aerial Photography
- Soils
 - Soil Rating Polygons**
 - Very limited 
 - Somewhat limited 
 - Not limited 
 - Not rated or not available 
 - Soil Rating Lines**
 - Very limited 
 - Somewhat limited 
 - Not limited 
 - Not rated or not available 
 - Soil Rating Points**
 - Very limited 
 - Somewhat limited 
 - Not limited 
 - Not rated or not available 
- Water Features
 - Streams and Canals 
- Transportation
 - Rails 
 - Interstate Highways 
 - US Routes 
 - Major Roads 
 - Local Roads 

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Livingston County, Missouri
 Survey Area Data: Version 20, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 13, 2010—Oct 17, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Custom Soil Resource Report

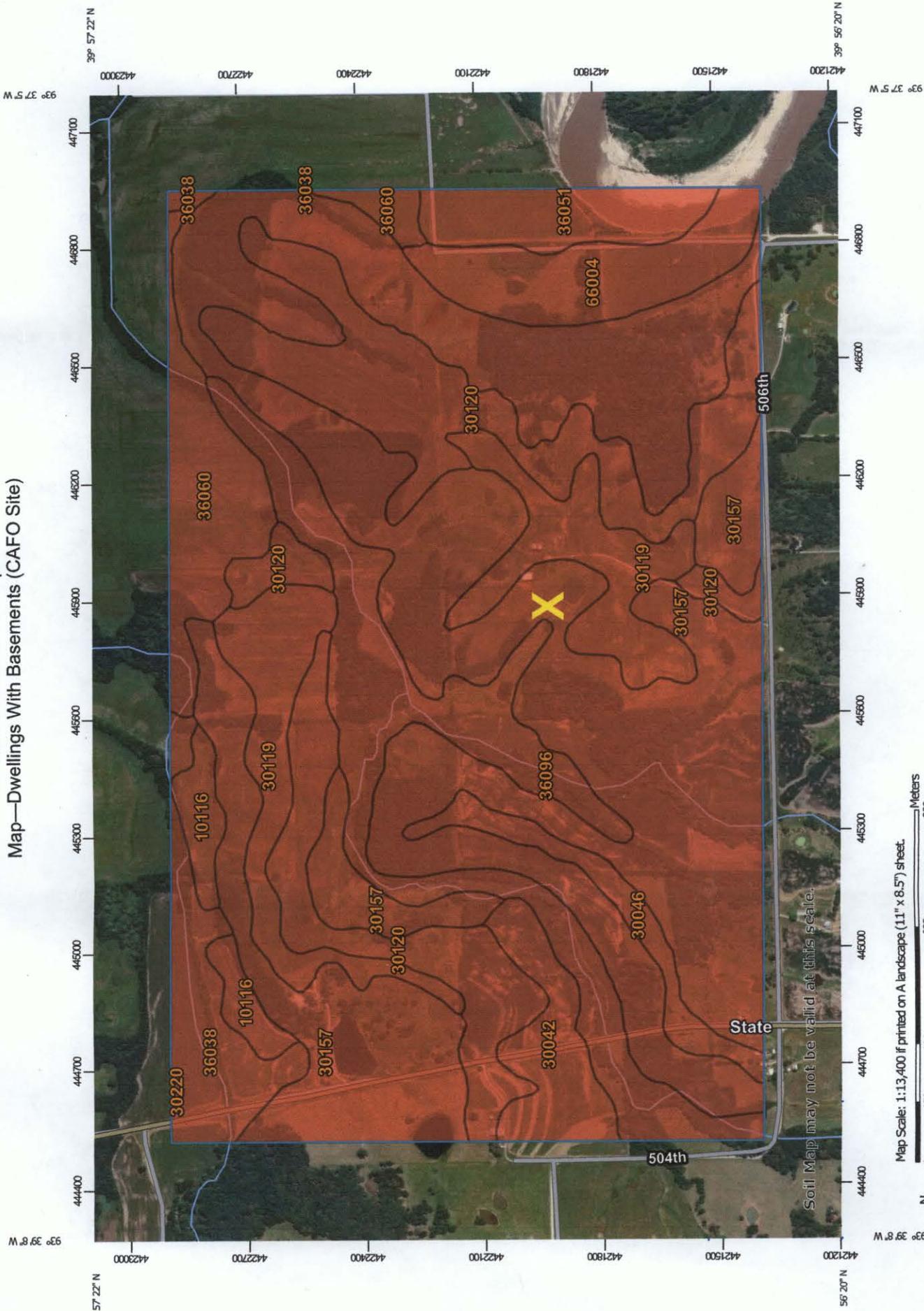
specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
 Map—Dwellings With Basements (CAFO Site)

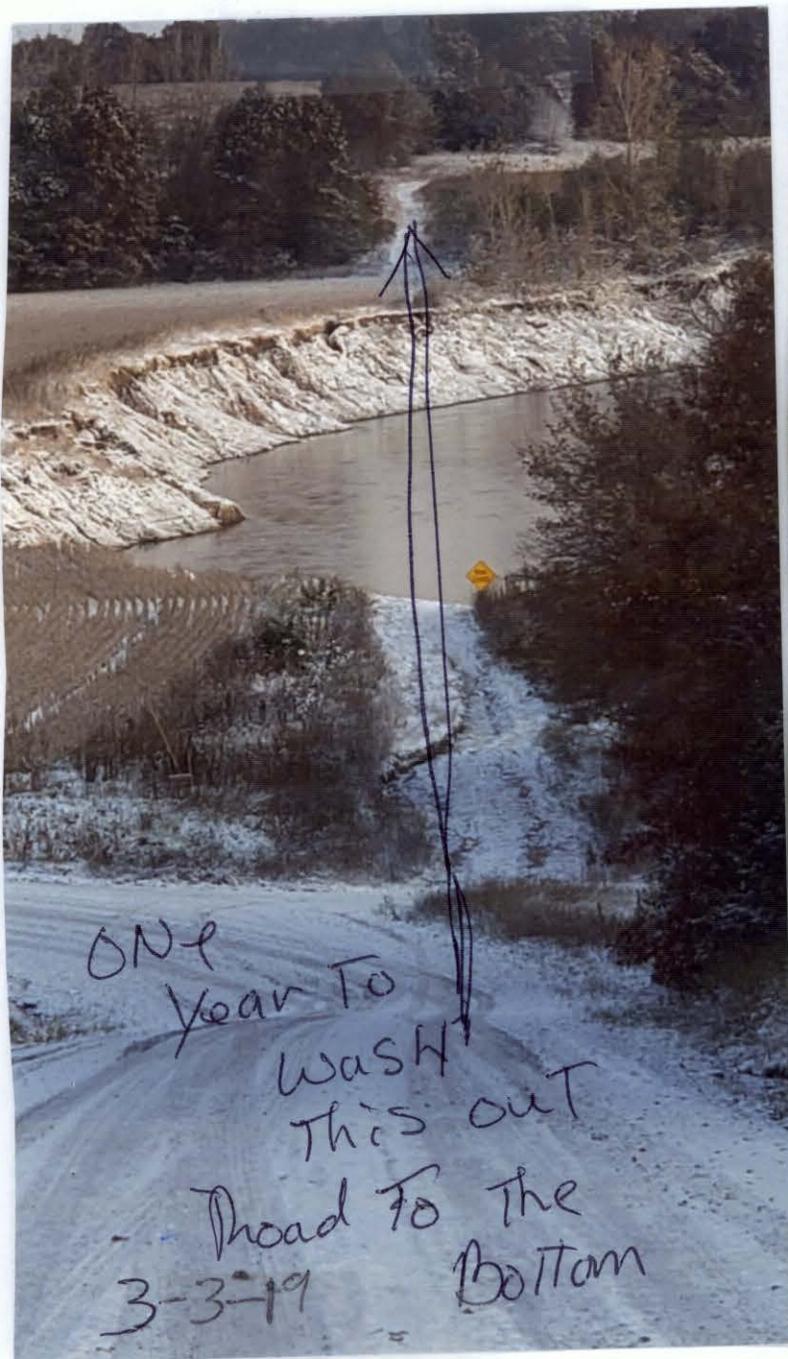


Soil Map may not be valid at this scale.

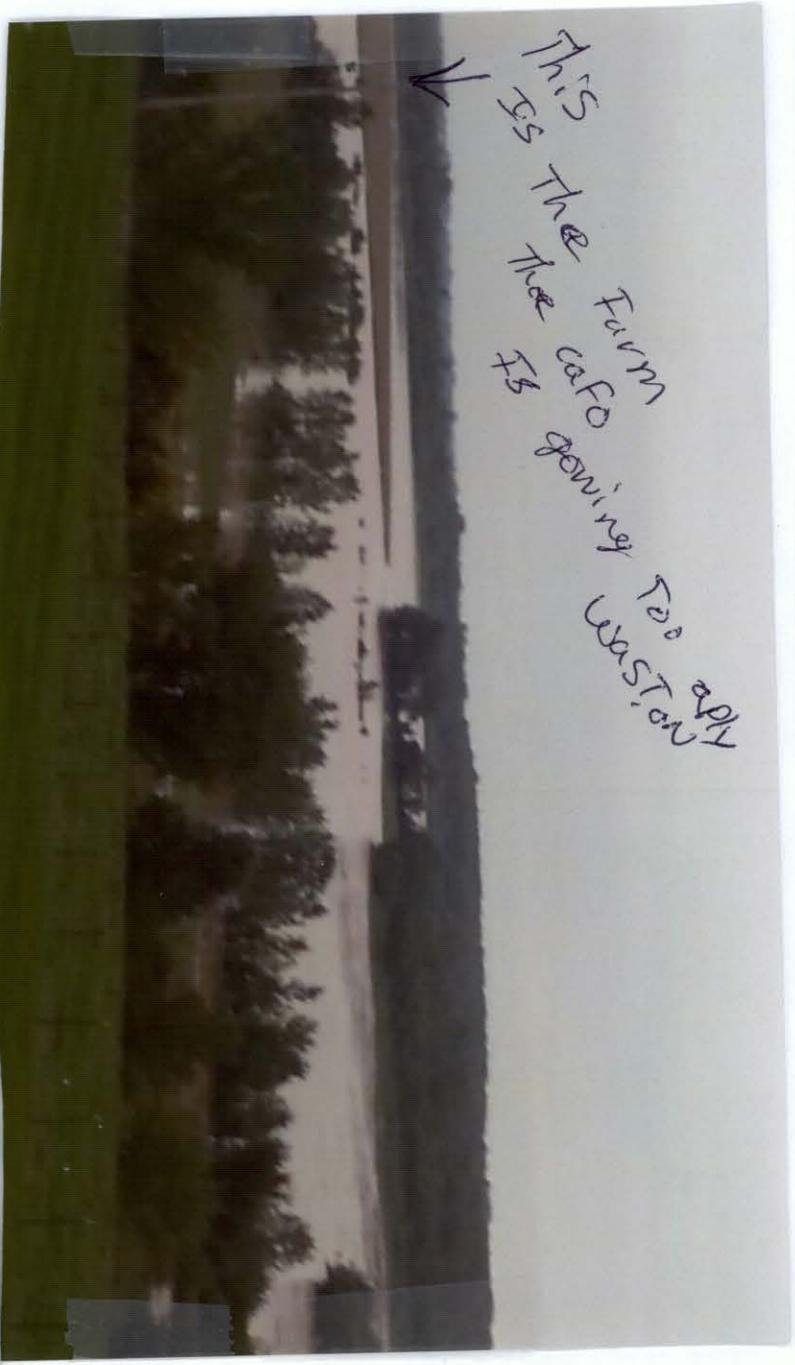
Map Scale: 1:13,400 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge ticks: UTM Zone 15N WGS84



ONLY
Year To
WASH
THIS OUT
- Road To The
3-3-19 Bottom



THIS
IS THE FARM
THE CAFO
IS GROWING TOO
FAST ON

Wray, Gorden

From: Abbott, Michael
Sent: Thursday, March 12, 2020 7:49 AM
To: Wray, Gorden
Cc: Peters, Heather
Subject: FW:

Follow Up Flag: Follow up
Flag Status: Flagged

Comment for Livingston CAFO.

Michael J. Abbott, Chief
Operating Permit Section
573-526-5781
michael.abbott@dnr.mo.gov

We'd like your feedback on the service you received from the Missouri Department of Natural Resources. Please consider taking a few minutes to complete the department's Customer Satisfaction Survey at <https://www.surveymonkey.com/r/MoDNRsurvey>. Thank you.

From: Wieberg, Chris <chris.wieberg@dnr.mo.gov>
Sent: Thursday, March 12, 2020 7:38 AM
To: Peters, Heather <heather.peters@dnr.mo.gov>; Abbott, Michael <michael.abbott@dnr.mo.gov>
Subject: FW:

FYA

Thanks,

Chris Wieberg
Director
Water Protection Program
573-522-9912

We'd like your feedback on the service you received from the Missouri Department of Natural Resources. Please consider taking a few minutes to complete the department's Customer Satisfaction Survey at <https://www.surveymonkey.com/r/MoDNRsurvey>. Thank you.

From: Bert Wire <wire360@gmail.com>
Sent: Wednesday, March 11, 2020 10:49 PM
To: Wieberg, Chris <chris.wieberg@dnr.mo.gov>
Subject:

Subject: cafo application #G510606Z8. This is a concerning the above application in reference to farm site location section 8, township 59N, range 24W in Livingston county. Based on the fact that this is located within a area that is predominantly composed of "Lockspring " soil type, I am requesting that you deny this application, this type of soil is not conducive to logoon structure that are required for this cafo. Again I ask that you ,please protect our soil and water natural resources. This site is going too be on one of the biggest under ground water aquifer! Respectively, bert wire 8511 liv chillicothe mo 64601 cell 515-491-0886

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,



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MAR 10 2020
Water Protection Program

Wray, Gorden

From: DNR.CAFO
Sent: Thursday, January 30, 2020 9:35 AM
To: Wray, Gorden
Cc: Peters, Heather
Subject: FW: CAFO Application #34322

From: Hayes Martens <hayes@pinwheellogistics.com>
Sent: Thursday, January 30, 2020 5:58 AM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: CAFO Application #34322

Hello,
My family and I live in the Northwest portion of Livingston County Missouri at 3567 LIV 510. Myself, my wife and our eight year old daughter are active in the outdoors with hiking, biking, camping and exploring this beautiful area of our county.

Allowing a CAFO to be built in this part of the county would be a detriment to our natural resources. The CAFO's planned construction site is an immediate threat to the nearby river, along with long term threats to the soil and property values in the area.

We do not want this CAFO! Please tell them to move along.

Hayes Martens
3567 LIV 510
Chillicothe, MO 64601
(660) 973-7432

RECEIVED

MAR 09 2020

Water Protection Program

March 3, 2020

Gordon Wray
Water Protection Program
Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102-0176

Dear Mr. Wray:

We, the Jackson Township board, trustee and clerk oppose the proposed permit for the United Hog Z-8 Sow Farm in Section 8, Township 59N, Range 24W in Livingston County.

We are asking you to objectively ask yourselves, as we have asked ourselves, how much can we accommodate and still maintain a stable environment and infrastructure.

Please consider the burden a repeal of the County's health ordinance may impose on Jackson Township should a proposed CAFO, and/or many CAFOs proliferate our area. Currently, we maintain around 70 miles of county roads on a limited budget. We are responsible for the snow removal, grading of gravel and dirt roads, repair and general maintenance of the county's roadways in Jackson Township, as well as placement and upkeep of all 24 inch and less culverts.

A study by the U. S. General Accounting Office (GAO) determined that the road damage caused by a single, 80,000 pound 18-wheeler was equivalent to the damage caused by 9,600 cars. The additional damage and deterioration from concrete/building supply, feed, manure/waste handling and livestock hauling trucks from outside the area CAFOs would be excessive, not only to our county roads, but also to our state highways 190, Y, A, W and U that crisscross across Jackson Township.

We don't find it difficult to anticipate the negative impacts of CAFOs on our rural community and Poosey Conservation Area. The consequences are similar across a wide range of geography. Anywhere CAFOs establish and expand, be it North America, South America, Europe or Asia, the adverse economic, environmental and social consequences of CAFOs are undeniable.

Missouri joined other states in 2019 who considered strengthening protections for CAFOs. This begs the question: Who is strengthening protections for OUR environment and local communities? The answer, we believe, should include input from our local county governments, local residents and local farm and ranch families. We request a public hearing, plus a thorough investigation of the suitability of the topography, the impact to the water table and the effect on Poosey Conservation Area. A reminder that Poosey Conservation Area is Missouri taxpayer funded and enjoyed by sports men & women and nature lovers from a wide area.

Sincerely,

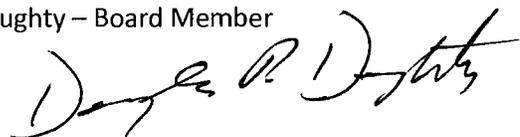
Jamie Reeter – Trustee

Candie Skipper – Clerk

Bert Wire – Board Member

Doug Doughty – Board Member

Jackson Twp c/o Jamie Reeter
7733 LIV 508
Chillicothe, MO 64601





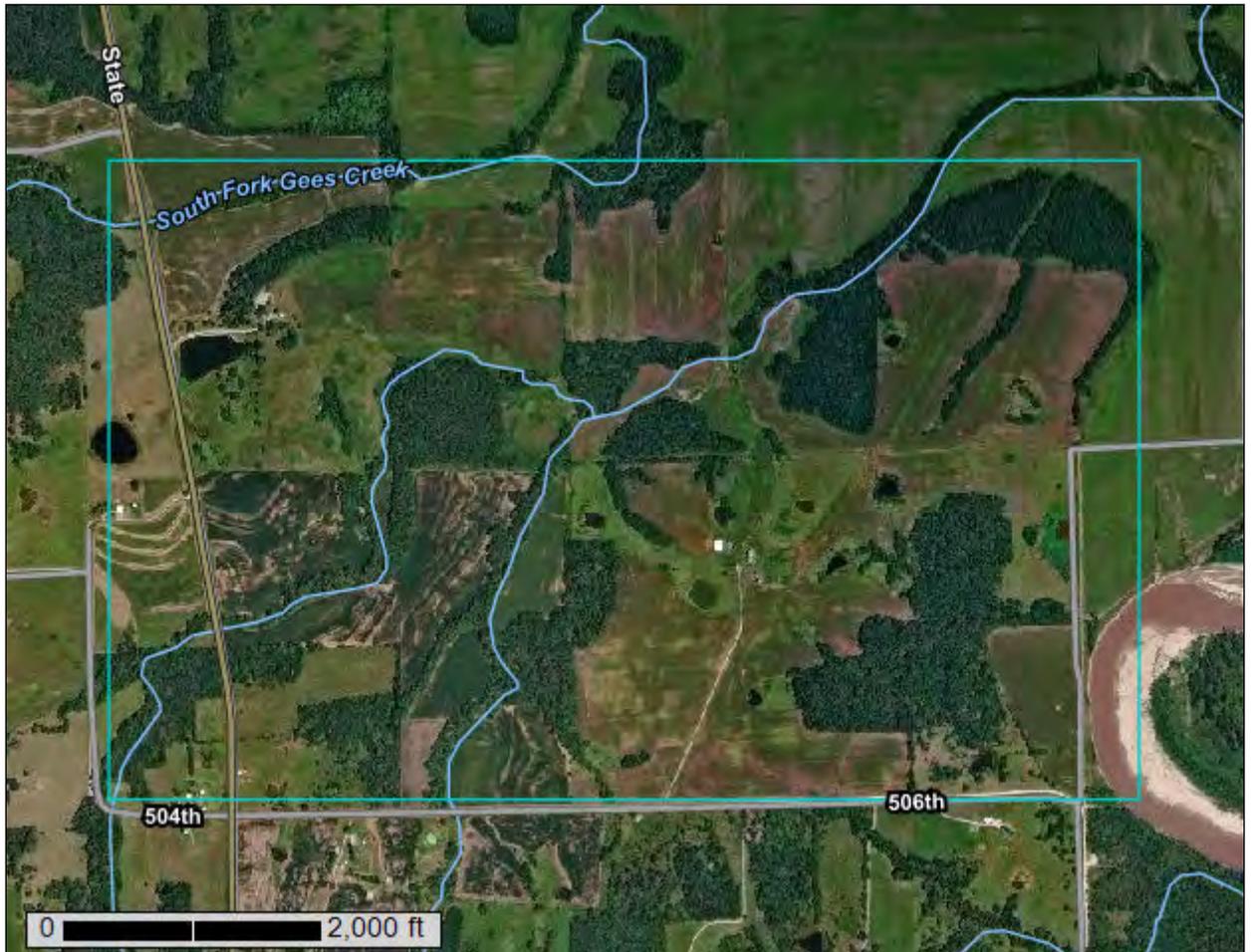
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Livingston County, Missouri**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

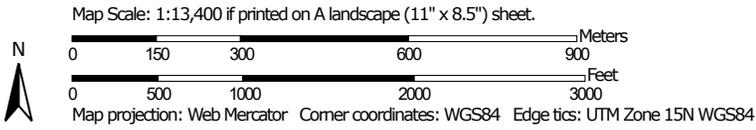
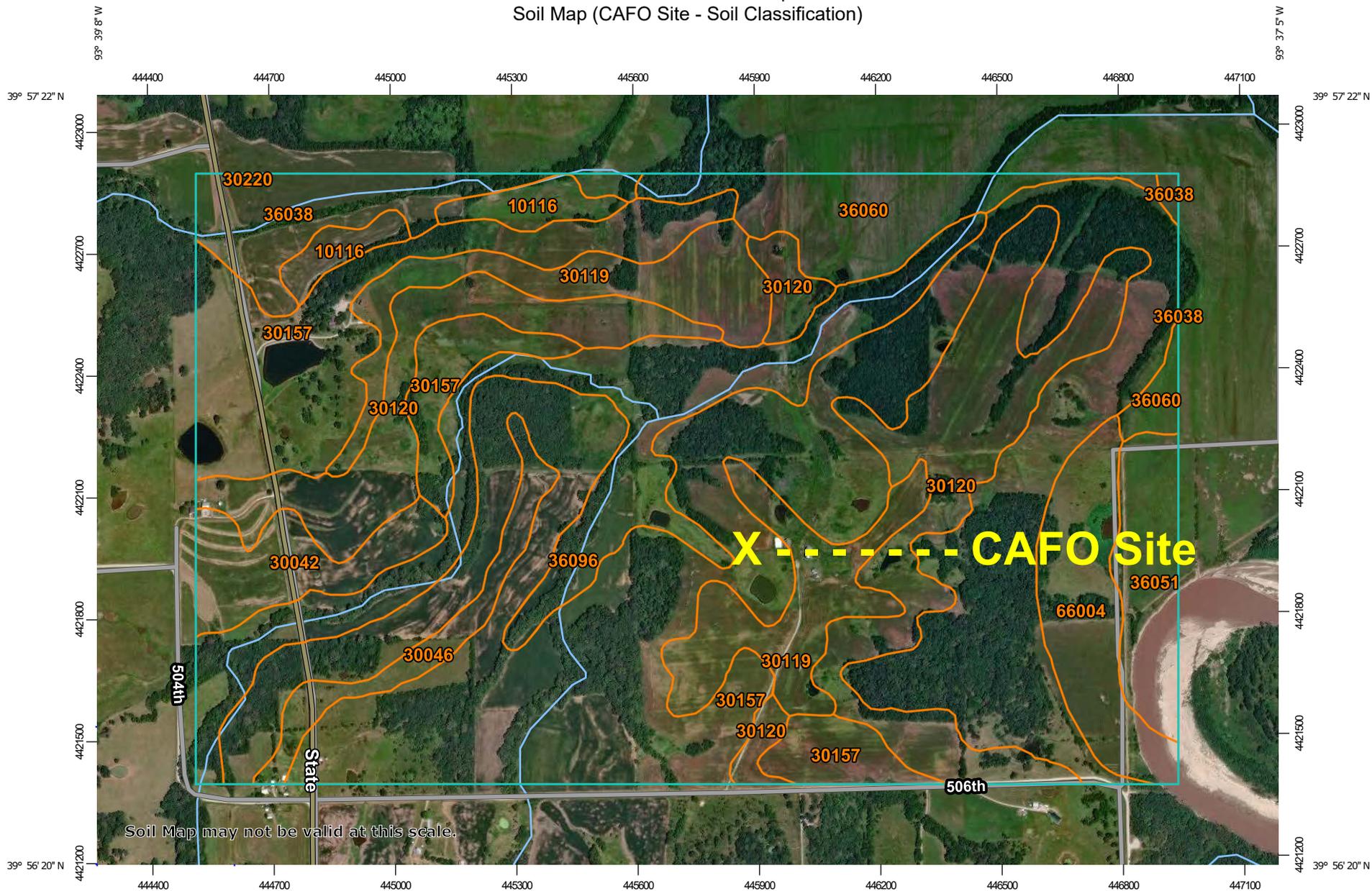
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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Soil Map (CAFO Site - Soil Classification)



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Livingston County, Missouri
 Survey Area Data: Version 20, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 13, 2010—Oct 17, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (CAFO Site - Soil Classification)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
10116	Sampsel silty clay loam, 2 to 5 percent slopes	15.9	1.8%
30042	Caleb silt loam, 9 to 14 percent slopes, eroded	25.6	2.8%
30046	Chillicothe silty clay loam, 5 to 9 percent slopes, eroded	17.8	2.0%
30119	Lagonda silty clay loam, 2 to 5 percent slopes, eroded	72.6	8.0%
30120	Lagonda silty clay loam, 5 to 9 percent slopes, eroded	131.6	14.5%
30157	Locksprings silty clay loam, 9 to 30 percent slopes	414.7	45.7%
30220	Weller silt loam, bench, 2 to 7 percent slopes	0.3	0.0%
36038	Tice silt loam, overwash, 0 to 2 percent slopes, frequently flooded	34.0	3.8%
36051	Zook silty clay loam, overwash, 0 to 2 percent slopes, frequently flooded	26.0	2.9%
36060	Carlow silty clay, 0 to 2 percent slopes, frequently flooded	41.8	4.6%
36096	Zook silty clay loam, 1 to 5 percent slopes, frequently flooded	88.5	9.8%
66004	Dockery silt loam, 0 to 2 percent slopes, frequently flooded	37.5	4.1%
Totals for Area of Interest		906.4	100.0%



Map Unit Descriptions (CAFO Site - Soil Classification)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the

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characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered

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practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Livingston County, Missouri

10116—Sampsel silty clay loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2qkzy
Elevation: 600 to 900 feet
Mean annual precipitation: 33 to 41 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 177 to 220 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Sampsel and similar soils: 95 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sampsel

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Convex, concave
Parent material: Residuum weathered from shale

Typical profile

Ap - 0 to 11 inches: silty clay loam
Bt - 11 to 80 inches: silty clay

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: Wet Footslope Prairie (R112XY041MO)
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: No

30042—Caleb silt loam, 9 to 14 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2qmw

Elevation: 550 to 1,000 feet

Mean annual precipitation: 35 to 41 inches

Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 177 to 209 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Caleb and similar soils: 95 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Caleb

Setting

Landform: Hillslopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Pedisegment

Typical profile

Ap - 0 to 3 inches: silt loam

A - 3 to 8 inches: fine sandy loam

Bt1 - 8 to 13 inches: loam

Bt2 - 13 to 47 inches: clay loam

C - 47 to 80 inches: sandy loam

Properties and qualities

Slope: 9 to 14 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: About 24 to 36 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: Loamy Footslope Savanna (R109XY018MO)

Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

Hydric soil rating: No

30046—Chillicothe silty clay loam, 5 to 9 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2qmwf
Elevation: 800 to 1,000 feet
Mean annual precipitation: 35 to 41 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 177 to 209 days
Farmland classification: Not prime farmland

Map Unit Composition

Chillicothe and similar soils: 98 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chillicothe

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess over residuum weathered from limestone

Typical profile

Ap - 0 to 10 inches: silty clay loam
Bt1 - 10 to 19 inches: silty clay
Bt2 - 19 to 50 inches: silty clay loam
2BC - 50 to 70 inches: silty clay
2R - 70 to 80 inches: bedrock

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: 60 to 84 inches to lithic bedrock
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Ecological site: Loess Upland Prairie (R109XY002MO)

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Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: No

30119—Lagonda silty clay loam, 2 to 5 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2yy80
Elevation: 700 to 1,200 feet
Mean annual precipitation: 35 to 41 inches
Mean annual air temperature: 50 to 57 degrees F
Frost-free period: 177 to 209 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Lagonda, eroded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lagonda, Eroded

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loess over pedisement

Typical profile

Ap - 0 to 7 inches: silty clay loam
Bt - 7 to 18 inches: silty clay
2Btg1 - 18 to 39 inches: silty clay loam
2Btg2 - 39 to 79 inches: clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: About 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e

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Hydrologic Soil Group: C/D
Ecological site: Loess Upland Prairie (R109XY002MO)
Hydric soil rating: No

Minor Components

Grundy

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Side slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loess Upland Prairie (R109XY002MO)
Hydric soil rating: No

Lamoni

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Till Upland Prairie (R109XY006MO)
Hydric soil rating: No

30120—Lagonda silty clay loam, 5 to 9 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2qnrw
Elevation: 500 to 1,400 feet
Mean annual precipitation: 33 to 41 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 177 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Lagonda and similar soils: 85 percent
Minor components: 14 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lagonda

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loess over pedisement

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Typical profile

Ap - 0 to 7 inches: silty clay loam
2Btg1 - 7 to 39 inches: silty clay
2Bt2 - 39 to 80 inches: clay loam

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Ecological site: Loess Upland Prairie (R109XY002MO)
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: No

Minor Components

Fine-silty

Percent of map unit: 12 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Ecological site: Loess Upland Prairie (R109XY002MO)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: No

Colo

Percent of map unit: 1 percent
Landform: Stream terraces
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Wet Upland Drainageway Prairie (R109XY029MO)
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: Yes

Haig

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex

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Across-slope shape: Convex
Ecological site: Loess Upland Prairie (R109XY002MO)
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: Yes

30157—Locksprings silty clay loam, 9 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2qnsd
Elevation: 680 to 1,500 feet
Mean annual precipitation: 35 to 41 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 177 to 209 days
Farmland classification: Not prime farmland

Map Unit Composition

Locksprings and similar soils: 90 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Locksprings

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from limestone and shale

Typical profile

A - 0 to 7 inches: silty clay loam
Bt - 7 to 28 inches: very bouldery clay
R - 28 to 80 inches: bedrock

Properties and qualities

Slope: 9 to 30 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

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Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: D

Ecological site: Interbedded Sedimentary Protected Backslope Forest
(F109XY013MO), Interbedded Sedimentary Exposed Backslope Woodland
(F109XY025MO)

Other vegetative classification: Trees/Timber (Woody Vegetation)

Hydric soil rating: No

Minor Components

Otter

Percent of map unit: 5 percent

Landform: Flood-plain steps

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)

Hydric soil rating: Yes

30220—Weller silt loam, bench, 2 to 7 percent slopes

Map Unit Setting

National map unit symbol: yt6z

Elevation: 500 to 1,200 feet

Mean annual precipitation: 35 to 41 inches

Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 177 to 209 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Weller, benches, and similar soils: 90 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Weller, Benches

Setting

Landform: Stream terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread

Down-slope shape: Convex, linear

Across-slope shape: Convex

Parent material: Loess

Typical profile

A - 0 to 11 inches: silt loam

Bt - 11 to 40 inches: silty clay

BCg - 40 to 80 inches: silty clay loam

Properties and qualities

Slope: 2 to 7 percent

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Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: Loess High Terrace Woodland (F109XY019MO)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Humeston

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

36038—Tice silt loam, overwash, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2qnvz
Elevation: 340 to 1,020 feet
Mean annual precipitation: 35 to 41 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 177 to 209 days
Farmland classification: Not prime farmland

Map Unit Composition

Tice, overwash, and similar soils: 80 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tice, Overwash

Setting

Landform: Flood plains
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 5 inches: silt loam
Apb - 5 to 22 inches: silty clay loam
Bw - 22 to 54 inches: silt loam
Cg - 54 to 75 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 12 to 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 12.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C
Ecological site: Wet Floodplain Woodland (F109XY037MO)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: No

Minor Components

Chequest

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

36051—Zook silty clay loam, overwash, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2yy7j
Elevation: 500 to 1,400 feet
Mean annual precipitation: 35 to 41 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 177 to 209 days
Farmland classification: Not prime farmland

Map Unit Composition

Zook, overwash, frequently flooded, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Zook, Overwash, Frequently Flooded

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium

Typical profile

Ap - 0 to 7 inches: silty clay loam
A1 - 7 to 20 inches: silty clay loam
A2 - 20 to 38 inches: silty clay
Bg - 38 to 52 inches: silty clay loam
BCg - 52 to 61 inches: silty clay loam
Cg - 61 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

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Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Ecological site: Wet Floodplain Prairie (R109XY031MO)
Hydric soil rating: Yes

Minor Components

Kennebec, frequently flooded

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Floodplain Prairie (R109XY005MO)
Hydric soil rating: No

Blackoar, frequently flooded

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Wet Floodplain Prairie (R109XY031MO)
Hydric soil rating: Yes

Colo, occasionally flooded

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Wet Floodplain Prairie (R109XY031MO)
Hydric soil rating: Yes

36060—Carlow silty clay, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: yt71
Elevation: 300 to 800 feet
Mean annual precipitation: 35 to 41 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 177 to 209 days
Farmland classification: Not prime farmland

Map Unit Composition

Carlow and similar soils: 85 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carlow

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 11 inches: silty clay
Bg1 - 11 to 17 inches: silty clay loam
Bg2 - 17 to 60 inches: clay
Bg3 - 60 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Ecological site: Wet Floodplain Prairie (R109XY031MO)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Minor Components

Carlow, ponded

Percent of map unit: 3 percent
Landform: Flood-plain steps
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Haynie, frequently flooded

Percent of map unit: 3 percent
Landform: Flood plains
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

36096—Zook silty clay loam, 1 to 5 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2qs2p
Elevation: 500 to 1,400 feet
Mean annual precipitation: 33 to 41 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 177 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Zook and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Zook

Setting

Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A1 - 0 to 4 inches: silty clay loam
A2 - 4 to 40 inches: silty clay loam
Bg - 40 to 60 inches: silty clay loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: Wet Upland Drainageway Prairie (R109XY029MO)
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: Yes

Minor Components

Arbela

Percent of map unit: 2 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Wet Upland Drainageway Prairie (R109XY029MO)
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: Yes

Landes

Percent of map unit: 2 percent
Landform: Drainageways
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Upland Drainageway Woodland (F109XY004MO)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: No

Nodaway

Percent of map unit: 2 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Upland Drainageway Woodland (F109XY004MO)
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: No

Wabash

Percent of map unit: 2 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Wet Upland Drainageway Prairie (R109XY029MO)
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: Yes

Zook

Percent of map unit: 2 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Wet Upland Drainageway Prairie (R109XY029MO)
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: Yes

66004—Dockery silt loam, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2qp85
Elevation: 350 to 900 feet
Mean annual precipitation: 37 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 184 to 228 days
Farmland classification: Not prime farmland

Map Unit Composition

Dockery and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dockery

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 10 inches: silt loam
C - 10 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 12.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: Loamy Floodplain Forest (F109XY030MO)
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Racoon

Percent of map unit: 5 percent

Landform: Flood-plain steps

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: Trees/Timber (Woody Vegetation)

Hydric soil rating: Yes

Dockery

Percent of map unit: 5 percent

Landform: Flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: Trees/Timber (Woody Vegetation)

Hydric soil rating: Yes

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Building Site Development

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Dwellings With Basements

Dwellings are single-family houses of three stories or less. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet.



The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification of the soil. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the

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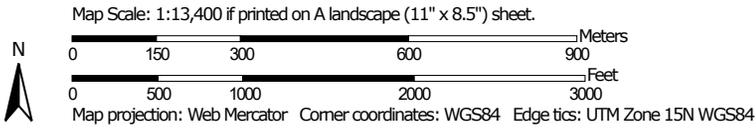
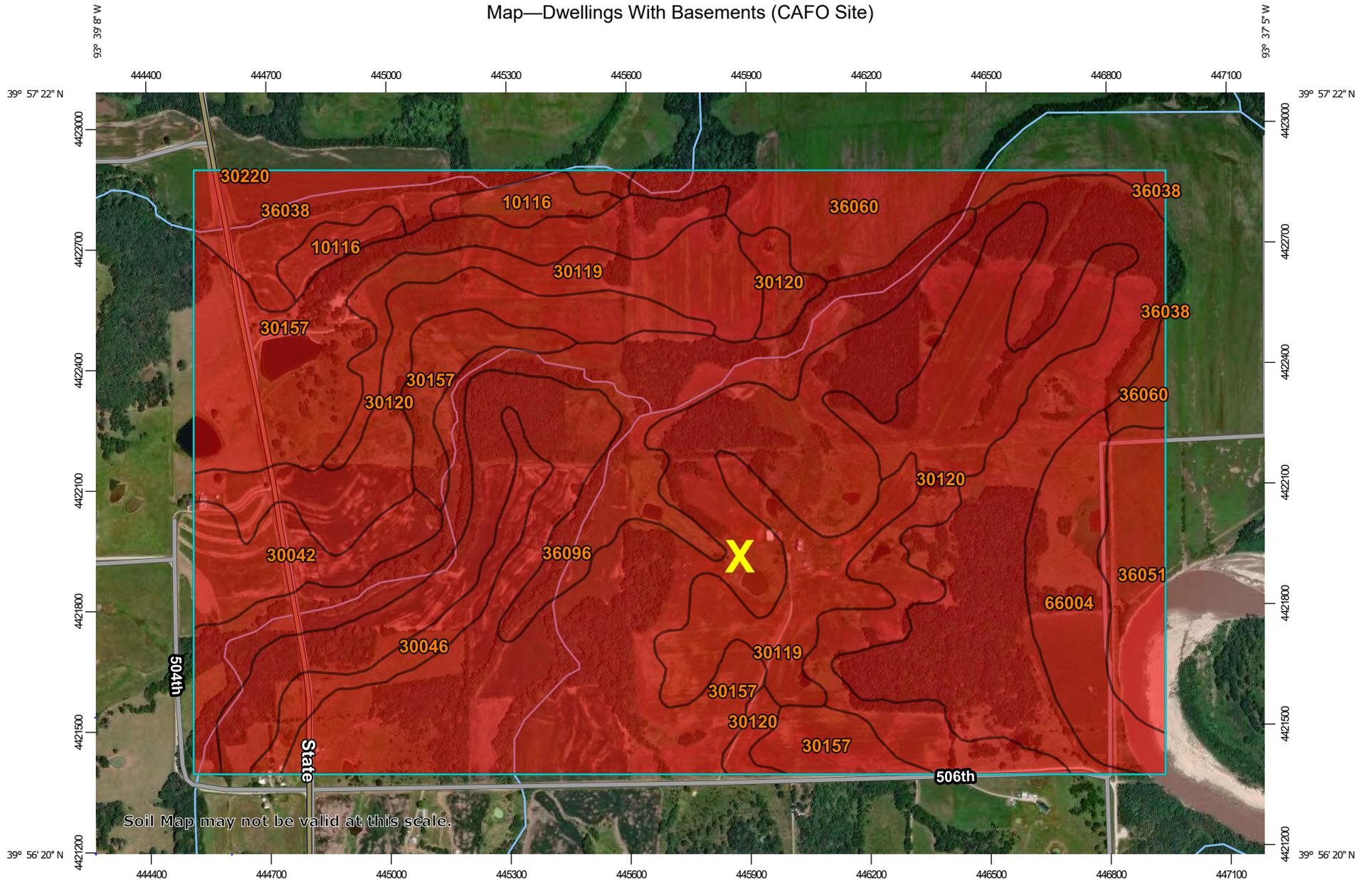
specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

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Map—Dwellings With Basements (CAFO Site)



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Background

 Aerial Photography

Soils

Soil Rating Polygons

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available

Soil Rating Lines

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available

Soil Rating Points

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Livingston County, Missouri
 Survey Area Data: Version 20, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 13, 2010—Oct 17, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Custom Soil Resource Report

Tables—Dwellings With Basements (CAFO Site)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
10116	Sampsel silty clay loam, 2 to 5 percent slopes	Very limited	Sampsel (95%)	Depth to saturated zone (1.00)	15.9	1.8%
				Shrink-swell (1.00)		
30042	Caleb silt loam, 9 to 14 percent slopes, eroded	Very limited	Caleb (95%)	Depth to saturated zone (1.00)	25.6	2.8%
				Slope (0.16)		
				Shrink-swell (0.07)		
30046	Chillicothe silty clay loam, 5 to 9 percent slopes, eroded	Very limited	Chillicothe (98%)	Depth to saturated zone (1.00)	17.8	2.0%
				Shrink-swell (1.00)		
30119	Lagonda silty clay loam, 2 to 5 percent slopes, eroded	Very limited	Lagonda, eroded (90%)	Depth to saturated zone (1.00)	72.6	8.0%
				Shrink-swell (1.00)		
			Lamoni (5%)	Depth to saturated zone (1.00)		
				Shrink-swell (1.00)		
			Grundy (5%)	Depth to saturated zone (1.00)		
				Shrink-swell (1.00)		
30120	Lagonda silty clay loam, 5 to 9 percent slopes, eroded	Very limited	Lagonda (85%)	Depth to saturated zone (1.00)	131.6	14.5%
				Shrink-swell (1.00)		
			Fine-Silty (12%)	Depth to saturated zone (1.00)		
				Shrink-swell (0.50)		
			Colo (1%)	Flooding (1.00)		
				Depth to saturated zone (1.00)		

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Shrink-swell (0.93)		
			Haig (1%)	Depth to saturated zone (1.00)		
				Shrink-swell (1.00)		
30157	Locksprings silty clay loam, 9 to 30 percent slopes	Very limited	Locksprings (90%)	Depth to saturated zone (1.00)	414.7	45.7%
				Shrink-swell (1.00)		
				Depth to hard bedrock (1.00)		
				Large stones (1.00)		
				Slope (0.37)		
			Otter (5%)	Ponding (1.00)		
				Flooding (1.00)		
				Depth to saturated zone (1.00)		
				Shrink-swell (0.50)		
30220	Weller silt loam, bench, 2 to 7 percent slopes	Very limited	Weller, benches (90%)	Shrink-swell (1.00)	0.3	0.0%
				Depth to saturated zone (0.95)		
			Humeston (5%)	Flooding (1.00)		
				Depth to saturated zone (1.00)		
				Shrink-swell (1.00)		
36038	Tice silt loam, overwash, 0 to 2 percent slopes, frequently flooded	Very limited	Tice, overwash (80%)	Flooding (1.00)	34.0	3.8%
				Depth to saturated zone (0.69)		
				Shrink-swell (0.50)		
			Chequest (5%)	Flooding (1.00)		
				Depth to saturated zone (1.00)		
				Shrink-swell (1.00)		
36051	Zook silty clay loam,	Very limited	Zook, overwash, frequently	Flooding (1.00)	26.0	2.9%



Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
	overwash, 0 to 2 percent slopes, frequently flooded		flooded (95%)	Depth to saturated zone (1.00) Shrink-swell (1.00)		
			Kennebec, frequently flooded (3%)	Flooding (1.00) Depth to saturated zone (0.61) Shrink-swell (0.14)		
			Blackoar, frequently flooded (1%)	Flooding (1.00) Depth to saturated zone (1.00)		
			Colo, occasionally flooded (1%)	Flooding (1.00) Depth to saturated zone (1.00) Shrink-swell (0.80)		
36060	Carlow silty clay, 0 to 2 percent slopes, frequently flooded	Very limited	Carlow (85%)	Flooding (1.00) Depth to saturated zone (1.00) Shrink-swell (1.00)	41.8	4.6%
			Carlow, ponded (3%)	Ponding (1.00) Flooding (1.00) Depth to saturated zone (1.00) Shrink-swell (1.00)		
			Haynie, frequently flooded (3%)	Flooding (1.00) Depth to saturated zone (0.35)		
36096	Zook silty clay loam, 1 to 5 percent slopes, frequently flooded	Very limited	Zook (90%)	Flooding (1.00) Depth to saturated zone (1.00) Shrink-swell (0.96)	88.5	9.8%
			Arbela (2%)	Flooding (1.00) Depth to saturated zone (1.00)		

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Shrink-swell (1.00)		
			Landes (2%)	Flooding (1.00)		
				Depth to saturated zone (0.16)		
			Nodaway (2%)	Flooding (1.00)		
				Depth to saturated zone (0.61)		
				Shrink-swell (0.50)		
			Wabash (2%)	Flooding (1.00)		
				Depth to saturated zone (1.00)		
				Shrink-swell (1.00)		
			Zook (2%)	Flooding (1.00)		
				Depth to saturated zone (1.00)		
				Shrink-swell (0.96)		
66004	Dockery silt loam, 0 to 2 percent slopes, frequently flooded	Very limited	Dockery (90%)	Flooding (1.00)	37.5	4.1%
				Depth to saturated zone (1.00)		
			Dockery (5%)	Ponding (1.00)		
				Flooding (1.00)		
				Depth to saturated zone (1.00)		
			Raccoon (5%)	Flooding (1.00)		
				Depth to saturated zone (1.00)		
				Shrink-swell (0.05)		
Totals for Area of Interest					906.4	100.0%

Rating	Acres in AOI	Percent of AOI
Very limited	906.4	100.0%
Totals for Area of Interest	906.4	100.0%

Rating Options—Dwellings With Basements (CAFO Site)

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Shallow Excavations



Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of

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digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

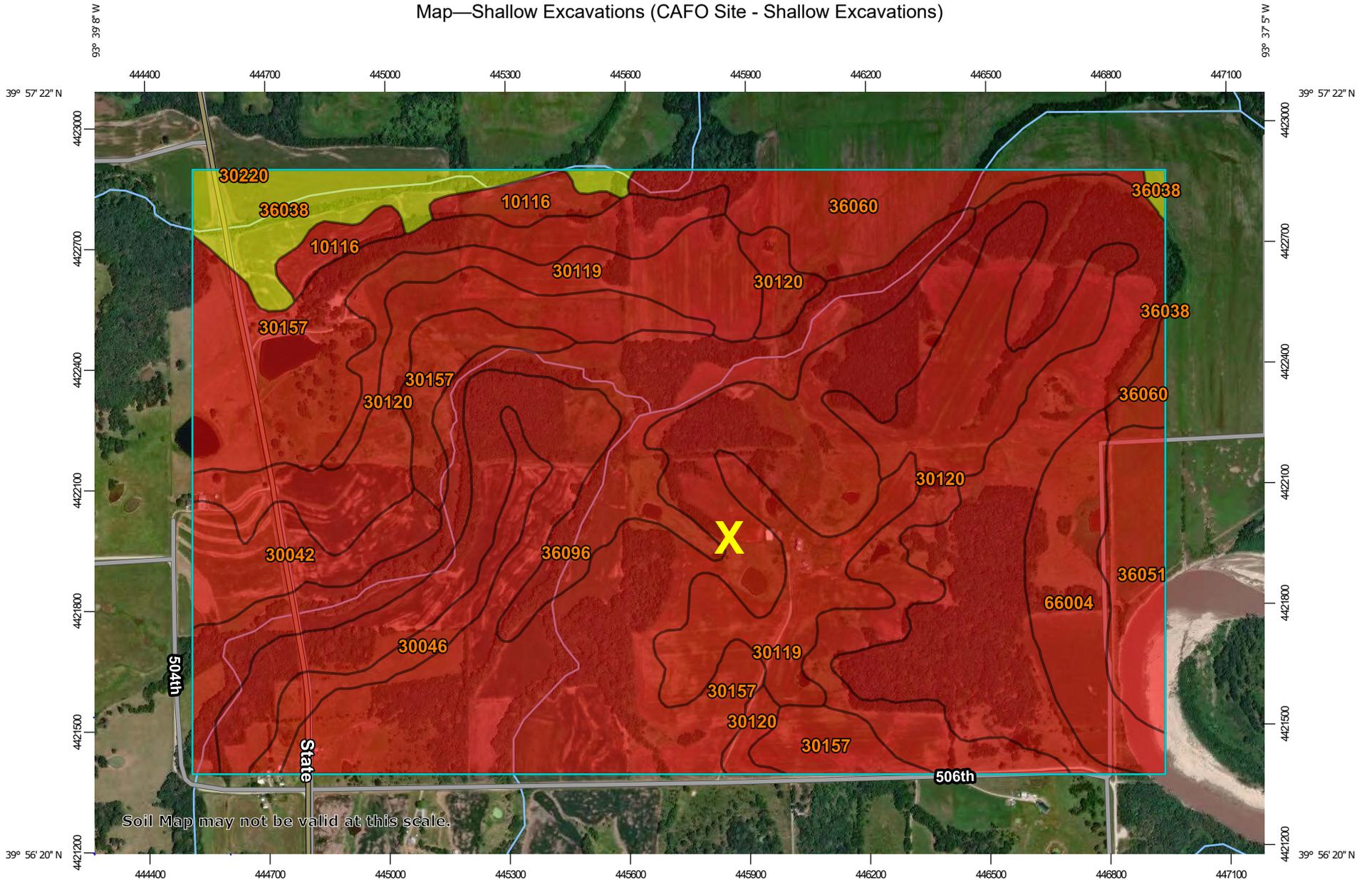
The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

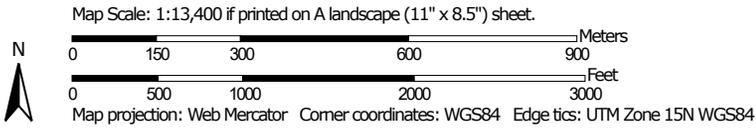
The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
 Map—Shallow Excavations (CAFO Site - Shallow Excavations)



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Background

 Aerial Photography

Soils

Soil Rating Polygons

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available

Soil Rating Lines

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available

Soil Rating Points

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Livingston County, Missouri
 Survey Area Data: Version 20, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 13, 2010—Oct 17, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Custom Soil Resource Report

Tables—Shallow Excavations (CAFO Site - Shallow Excavations)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
10116	Sampsel silty clay loam, 2 to 5 percent slopes	Very limited	Sampsel (95%)	Depth to saturated zone (1.00)	15.9	1.8%
				Unstable excavation walls (0.51)		
				Too clayey (0.28)		
				Dusty (0.09)		
30042	Caleb silt loam, 9 to 14 percent slopes, eroded	Very limited	Caleb (95%)	Depth to saturated zone (1.00)	25.6	2.8%
				Slope (0.16)		
				Dusty (0.04)		
				Unstable excavation walls (0.01)		
30046	Chillicothe silty clay loam, 5 to 9 percent slopes, eroded	Very limited	Chillicothe (98%)	Depth to saturated zone (1.00)	17.8	2.0%
				Unstable excavation walls (0.51)		
				Dusty (0.07)		
				Too clayey (0.02)		
30119	Lagonda silty clay loam, 2 to 5 percent slopes, eroded	Very limited	Lagonda, eroded (90%)	Depth to saturated zone (1.00)	72.6	8.0%
				Dusty (0.09)		
				Unstable excavation walls (0.01)		
			Lamoni (5%)	Depth to saturated zone (1.00)		
				Dusty (0.09)		
				Too clayey (0.08)		
				Unstable excavation walls (0.02)		
			Grundy (5%)	Depth to saturated zone (1.00)		
				Unstable excavation walls (0.16)		

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Dusty (0.09)		
				Too clayey (0.02)		
30120	Lagonda silty clay loam, 5 to 9 percent slopes, eroded	Very limited	Lagonda (85%)	Depth to saturated zone (1.00)	131.6	14.5%
				Unstable excavation walls (0.51)		
				Dusty (0.07)		
			Fine-Silty (12%)	Depth to saturated zone (1.00)		
				Dusty (0.09)		
				Unstable excavation walls (0.01)		
			Colo (1%)	Depth to saturated zone (1.00)		
				Dusty (0.07)		
				Unstable excavation walls (0.01)		
			Haig (1%)	Depth to saturated zone (1.00)		
				Unstable excavation walls (0.51)		
				Too clayey (0.13)		
				Dusty (0.07)		
30157	Locksprings silty clay loam, 9 to 30 percent slopes	Very limited	Locksprings (90%)	Depth to hard bedrock (1.00)	414.7	45.7%
				Depth to saturated zone (1.00)		
				Large stones (1.00)		
				Too clayey (0.99)		
				Unstable excavation walls (0.51)		
			Otter (5%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Flooding (0.60)		
				Dusty (0.07)		



Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Unstable excavation walls (0.01)		
30220	Weller silt loam, bench, 2 to 7 percent slopes	Somewhat limited	Weller, benches (90%)	Depth to saturated zone (0.95)	0.3	0.0%
				Too clayey (0.21)		
				Dusty (0.07)		
				Unstable excavation walls (0.01)		
36038	Tice silt loam, overwash, 0 to 2 percent slopes, frequently flooded	Somewhat limited	Tice, overwash (80%)	Flooding (0.80)	34.0	3.8%
				Depth to saturated zone (0.69)		
				Dusty (0.07)		
				Unstable excavation walls (0.01)		
36051	Zook silty clay loam, overwash, 0 to 2 percent slopes, frequently flooded	Very limited	Zook, overwash, frequently flooded (95%)	Depth to saturated zone (1.00)	26.0	2.9%
				Flooding (0.80)		
				Dusty (0.07)		
				Unstable excavation walls (0.04)		
				Too clayey (0.01)		
			Blackoar, frequently flooded (1%)	Depth to saturated zone (1.00)		
				Flooding (0.80)		
				Dusty (0.07)		
				Unstable excavation walls (0.01)		
			Colo, occasionally flooded (1%)	Depth to saturated zone (1.00)		
				Flooding (0.60)		
				Dusty (0.07)		
				Unstable excavation walls (0.01)		
36060	Carlow silty clay, 0 to 2 percent slopes, frequently flooded	Very limited	Carlow (85%)	Depth to saturated zone (1.00)	41.8	4.6%

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Unstable excavation walls (1.00)		
				Too clayey (0.98)		
				Flooding (0.80)		
				Dusty (0.07)		
			Carlow, ponded (3%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Unstable excavation walls (1.00)		
				Flooding (0.60)		
				Too clayey (0.56)		
36096	Zook silty clay loam, 1 to 5 percent slopes, frequently flooded	Very limited	Zook (90%)	Depth to saturated zone (1.00)	88.5	9.8%
				Flooding (0.80)		
				Dusty (0.07)		
				Unstable excavation walls (0.01)		
			Arbela (2%)	Depth to saturated zone (1.00)		
				Flooding (0.80)		
				Dusty (0.07)		
				Too clayey (0.03)		
				Unstable excavation walls (0.02)		
			Wabash (2%)	Depth to saturated zone (1.00)		
				Unstable excavation walls (1.00)		
				Flooding (0.80)		
				Too clayey (0.50)		
				Dusty (0.07)		
			Zook (2%)	Depth to saturated zone (1.00)		
				Flooding (0.80)		
				Dusty (0.07)		

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Unstable excavation walls (0.01)		
66004	Dockery silt loam, 0 to 2 percent slopes, frequently flooded	Very limited	Dockery (90%)	Depth to saturated zone (1.00)	37.5	4.1%
				Flooding (0.80)		
				Dusty (0.07)		
				Unstable excavation walls (0.01)		
			Dockery (5%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Flooding (0.80)		
				Dusty (0.07)		
				Unstable excavation walls (0.01)		
			Racoon (5%)	Depth to saturated zone (1.00)		
				Flooding (0.60)		
				Too clayey (0.11)		
				Dusty (0.07)		
				Unstable excavation walls (0.01)		
			Totals for Area of Interest			

Rating	Acres in AOI	Percent of AOI
Very limited	872.0	96.2%
Somewhat limited	34.4	3.8%
Totals for Area of Interest	906.4	100.0%

**Rating Options-
Excavations)**

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified
Tie-break Rule: Higher

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Custom Soil Resource Report

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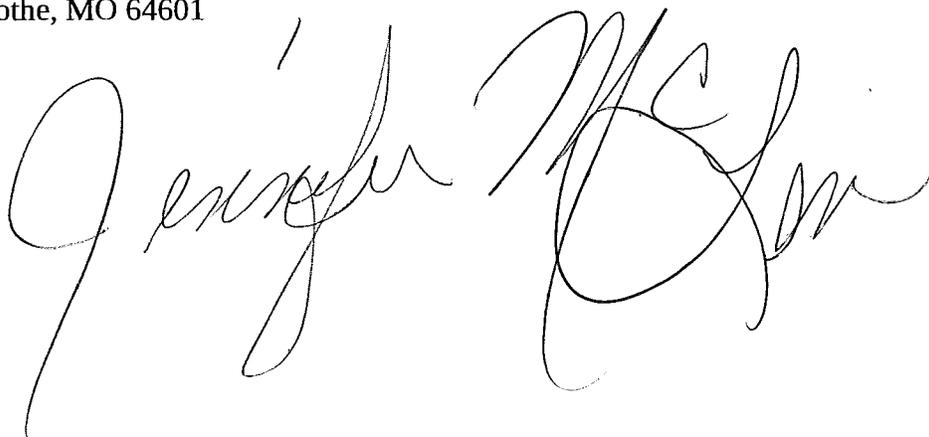
DO not grant this CAFO a permit. This same CAFO owner, Zeyzing, had a leak in a neighboring county (Caldwell County) in 2005. The leak went for three days before it was stopped, traveled four and a half miles of stream and killed over 4100 fish. My biggest concern is that last night, when talking to my state representative, Rusty Black, he said that there," will be mistakes," when referring to possible leaks and that," once it happens, DNR will come in. They will get a fine and clean it up."

The two sites that are proposed in Livingston County, MO are approximately four miles from Poosey state park and on top of the aquifer. According^{to} the CDC report," Understanding AFO's and CAFO's," on page two that over application of livestock wastes can overload soil with macro nutrients including nitrogen and phosphorous and macro nutrients that have been added to animal feed like heavy metals. This CAFO is going to have the waste storage pit underground which leads to bacteria growth more health risks when it leaks into the ground. When it leaks and gets into the aquifer, the same CDC report sites on page four," Contaminated water can move laterally and eventually enter surface water such as rivers and streams. The city of Chillicothe, Missouri gets their water (as reported to me by a Chillicothe Municipal Utility worker) from five ground wells off of the Grande River. When this happens and nitrate levels rise to an unsafe level, Chillicothe does not have a reverse osmosis, distillation or any other process to get the nitrates out of the water. My farm runs on a well and there is an imminent danger of this pollution to my husband and I, our livestock and our family pets.

Also, the CDC has stated that Hepatitis E has been found in slaughter house hogs. This is another disease that will end up in the water and compromise Livingston County residents' health. The use of antibiotics in the hogs and arsenic and heavy metals in the feed add additional threats to the pollution of our water and soil. The soil that they want to build the CAFOs on is lock spring soil which as you know the saturation and drying point of this soil will lead to cement cracking and thus leading to leaks that will not only harm rural residents but the entire city of Chillicothe.

Please do not grant this CAFO a permit! I would like to have a public hearing on this matter at a time that my husband and I can attend as we work. Please schedule a public hearing!

Thank you,
Jennifer McLin
3800 Liv. 519
Chillicothe, MO 64601



RECEIVED
MAR 10 2020
Water Protection Program

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 17 2020
Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,

Jim Skipper

Wray, Gorden

From: DNR.CAFO
Sent: Thursday, January 30, 2020 4:33 PM
To: Wray, Gorden
Cc: Peters, Heather
Subject: FW: CAFO Objection Letter

From: Kris Daniel <danielkris@sbcglobal.net>
Sent: Thursday, January 30, 2020 12:27 PM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: CAFO Objection Letter

RE: CAFO Application #34322 by Z8Sow Farm
Site location Section 8, Township 59N, Range 24 W in Livingston County

As a resident who lives near this proposed CAFO, I **strongly** oppose the granting of a permit.

We request a hearing by MDNR before granting a permit for the following reasons:

The CAFO will be built just outside the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams.

Due to the bottleneck and levee structure in this section of the river, the area is very prone to flooding and high saturation for long periods of time.

Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields.

Conditions in CAFOS breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community.

Air emissions and water contamination threaten the health and future of established organic famrs in the area, as well as Poosey Conservation Area, just 3.5 miles to the west.

The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, comping, recreation and an annual Tour of Poosey.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOS, and can even be impacted for up to 7 miles surrounding the operation.

County roads will face significant wear from heavy truckloads hauling hogs and feed.

If United Hog Systems is looking to expand to Livingston County, this could be just the first of several large hog operations proposed for the area.

Kris Daniel
3853 Hwy A Chillicothe, Mo 64601
660-247-0154

Sent from my iPhone

January 29, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED

FEB 11 2020

Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

Sincerely,

A handwritten signature in cursive script that reads "Larry Chambers". The signature is written in black ink and is positioned below the word "Sincerely,".

ALVIN THOMPSON
Commissioner East District
Extension 209

DAVID MAPEL
Commissioner West District
Extension 218



ED DOUGLAS
Presiding Commissioner
Extension 202

SHERRY PARKS
County Clerk
Extension 217

COUNTY COMMISSION
660-646-8000

LIVINGSTON COUNTY COURTHOUSE
700 WEBSTER STREET
CHILLICOTHE, MO. 64601

COUNTY CLERK
660-646-8000

January 07, 2020

Missouri Dept of Natural Resources
Box 176
Jefferson City Mo 665102

RECEIVED
JAN 16 2020
Water Protection Program

To Whom It May Concern,

I am responding to a letter from Allied Engineering Services in which they mentioned that United Hog Systems is planning construction of a confined animal feeding operation in Livingston County.

The letter asked for comments to be sent to you. Our comment is that we are in the process of revising our County Health Ordinance to conform to the new law, Senate Bill 391. Our revised ordinance may or may not be done in 30 days. We are working on it and are planning a hearing with the attorney for United Hog where they have input on this ordinance. We anticipate that our revised ordinance will still have a public hearing as a part of the process for approval by our County Commission. Please feel free to contact me if you have any questions.

Sincerely,

Ed Douglas
Presiding Commissioner
Livingston County Mo

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 03 2020
Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern!

Protect Our Rivers!

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Protect Our Conservation Areas!

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life!

We are requesting a public hearing for review of this matter.

Sincerely,

Karen E Wood

Wray, Gorden

From: Loretta Ray <loretta@ncmmh.org>
Sent: Wednesday, February 26, 2020 12:17 PM
To: Wray, Gorden
Subject: Propose placement of a CAFO in Livingston County

Follow Up Flag: Follow up
Flag Status: Flagged

I am writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59 N, Range 24 W, in Livingston County. I oppose the placement of this operation for many reasons. Some of those reasons include the impact on personal health and local natural resources, health of livestock and the far-reaching impact to the local infrastructure. The proposed site is located just outside the Thompson River Floodplain. The area is prone to flooding with high saturation for long periods of time. Furthermore, the land in question sits within the northwest Missouri groundwater province which is estimated to contain 2.2% or 10.2 trillion gallons of Missouri's potable ground water. Leaching of contaminants into the groundwater is of great concern. I strongly believe this area cannot accommodate the strain the proposed CAFO would put on the infrastructure, fresh water, air and way of live. I am requesting a public hearing for review of this matter. Thank you for your attention to this matter.

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 08 2020
Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,


4838 Hwy Y
Chillicothe, Mo. 64601

February 28, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

We are requesting a public hearing for review of this matter.

Sincerely,

*Maria Cole
Livingston CO
Landowner*

RECEIVED
MAR 10 2020
Water Protection Program

Wray, Gorden

From: DNR.CAFO
Sent: Wednesday, January 29, 2020 4:12 PM
To: Wray, Gorden
Subject: FW: CAFO Application #34322

Heather Peters
Missouri Department of Natural Resources Water Protection Program Operating Permits Section, Industrial Permits Unit
(573) 526-5449

-----Original Message-----

From: Mary <m42turner24@msn.com>
Sent: Wednesday, January 29, 2020 3:44 PM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: CAFO Application #34322

To Whom It May Concern:

We would like to request a hearing by the MoDNR before granting the permit for CAFO Application #34322 by Z8Sow Farm. The Site Location, Section 8, Township59N, Range 24W in Livingston County is so near the Poosey Conservation Area. This area is enjoyed by kayakers, mountain bikers, bird watchers, and nature enthusiasts. We enjoy the rugged terrain, unspoiled wildlife, and beautiful waters. Allowing a large hog operation would ruin that for northwest Missouri.

The Thompson River is prone to flooding and high saturation of the surrounding area because of the bottleneck and levee structure of the river. The manure and waste from the hog farm would contaminate the water and threaten the health and future of established organic farms in the area.

Again, we request a hearing in this matter.

Mary Turner & Brent Turner
2113 Oaklawn Dr.
Chillicothe, MO
660-646-1200

GS10606

RE: CAFO Application #~~2022~~ by Z8Sow Farm

Site location Section 8, Township 59N, Range 24 W in Livingston County

We/I oppose granting this CAFO a permit.

We /I request a hearing by MDNR before granting a permit.

A hearing is requested for the following reasons:

- The CAFO will be built just outside the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams.
- Due to the bottleneck and levee structure in this section of the river, the area is very prone to flooding and high saturation for long periods of time.
- Flooding and erosion case concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields.
- Conditions in CAFOS breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community.
- Air emissions and water contamination threaten the health and future of established organic famrs in the area, as well as Poosey Conservation Area, just 3.5 miles to the west.

I look forward to a hearing.

Name *Melinda Cass*

phone # *660-346-0252*

address or email *419 S. Monroe
Brookfield, Mo. 64628*

Additional effects of this a CAFO in this area are as follows:

- The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, comping, recreation and an annual Tour of Poosey.
- Property values have been shown to decrease by up to 88% for properties adjacent to CAFOS, and can even be impacted for up to 7 miles surrounduibg the operation.
- County roads will face significant wear from heavy truckloads hauling hogs and feed.
- If United Hog Systems is looking to expand to Livingston County, this could be just the first of severl large hog operatons proposed for the area.

RECEIVED
MAR 03 2020
Water Protection Program

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED
MAR 10 2020
Water Protection Program

February 28, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

We are requesting a public hearing for review of this matter.

Sincerely,

Larry & Margaret Vance
Livingston County Landowners

RECEIVED
MAR 10 2020
Water Protection Program

January 29, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED

FEB 06 2020

Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

Sincerely,



Wray, Gorden

From: Norman Ropp <roppauctions@gmail.com>
Sent: Sunday, March 8, 2020 10:27 PM
To: Wray, Gorden
Subject: Hog confinement hearing

Follow Up Flag: Follow up
Flag Status: Flagged

I am writing this letter in regards to the proposed placement of a confined hog operations Cafo unit by the united hog farms in section 8 Township 59 N. Range 24 W. in Livingston county Missouri we own a property just north of this location we are opposed to the placement of this operation for many reasons including the impact on our personal health and natural resources in the health of our livestock in the long reaching impact to the local infrastructure including our roadways I am asking for a hearing to be granted on this issue Please thank !you may reach me at 660-247-1914

February 4, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED

FEB 10 2020

Water Protection Program

Dear Sir or Madam:

I am writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. I own property southwest of this location. I am opposed to the placement of this operation for many reasons, including the impact on my personal health, our local natural resources, the health of livestock and the long-reaching impact to the local infrastructure, including our roadways.

I am sure that you have received many letters explaining the Thompson River Floodplain and the damage that could occur if CAFOs were allowed to come into the area. I will not reiterate all of those facts and figures for you. My family has been farming in this area since 1838. Our farming operation is located southwest of the proposed site. We do not have rural water and we rely on spring fed wells for our water source. Currently my brother and I maintain six spring fed wells. These are used for human consumption as well as livestock. These springs have been used for hundreds of years before my family settled the land by Native American Indians and wildlife. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. As you are aware, the land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of tremendous concern.

Other areas of concern with allowing CAFOs into Livingston County include: antibiotic-resistant bacteria and disease that can be spread to the surrounding community, air emissions and water contamination of established organic farming, Poosey Conservation Area (which brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation and tours), declining property values, and county roads will face significant wear. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

Sincerely,



Patricia L. Howard
2111 Lakeview Dr.
Chillicothe, MO 64601
Pdoughty63@yahoo.com
660-247-1508

March 6, 2020

Department of Natural Resources

Re: CAFO Application GS10606 by Z8Sow Farm
Site Location Section 8, Township 59N, Range 24 W in Livingston County

To Whom It May Concern:

I oppose granting this CAFO a permit. I request a hearing by MDNR before granting a permit. A hearing is requested for the following reasons:

- The CAFO will be built just outside the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams.
- Due to the bottleneck and levee structure in this section of the river, the area is very prone to flooding and high saturation for long periods of time.
- Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields.
- Conditions in CAFOS breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community.
- Air emissions and water contamination threaten the health and future of established organic farmers in the area, as well as Poosey Conservation Area, just 3.5 miles to the west.

I look forward to a hearing.

Sincerely,

Sondra Sturguess

Sondra Sturguess

Wray, Gorden

From: Randy J Street <rjslks@gmail.com>
Sent: Tuesday, February 25, 2020 10:18 AM
To: Wray, Gorden
Subject: CAFO

Follow Up Flag: Follow up
Flag Status: Flagged

I have concerns of a proposed CAFO in northern Livingston County. There needs to be public hearings on these matters. These CAFO's effect people who live around these kind of operations. There seems to very little concern for people living around these operations. I'm also fairly sure anyone having these kind of operations built are not living at the CAFO locations or near one. A public hearing would give people a chance to hear from CAFO owners and operators, and give people living around these operations a chance to voice their concerns.

Sent from my iPhone

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

REILLY GILLIAM

Sincerely,

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 08 2021
Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,



Ron Harding
1020 LIV 507
Jamesport MO 64648

Our property backs up
to Poosey Cons. area.

RECEIVED

FEB 06 2020

January 26, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local roadways.

I suffer from COPD and wear oxygen continuously. Upon investigation of the impacts of similar operations on communities, I discovered concerning information about the affect of CAFOs. Duke University has conducted studies proving that individuals who live in close proximity to CAFOs have shorter life expectancies due to anemia, kidney disease and tuberculosis, are subject to increased infant mortality rates, have increased incidences of septic infections, and increased respiratory disease. A CAFO in such close proximity to my home is very concerning to me.

The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

We own livestock, and are concerned about potential ill effects they may suffer as a result of being in close proximity to the CAFO, in part due to the increased fly population that is inevitable when that number of livestock is in one location.

My husband and I built our home here many years ago. The thought that my family's health and safety is at risk due to this proposed CAFO is unacceptable. What can we do to contest authority for the CAFO to be authorized/licensed? What can the DNR do to either regulate CAFOs in general and this CAFO in particular? Is there anything else we can do to prevent this impending disaster? We will be doing everything in our power to prevent this.

Sincerely,

Steve & Mary Kae Saale

Steve and Mary Kae Saale

Wray, Gorden

From: DNR.CAFO
Sent: Friday, January 31, 2020 11:19 AM
To: Wray, Gorden
Subject: FW: CAFO Application #34322 by Z8Sow Farm

Heather Peters
Missouri Department of Natural Resources
Water Protection Program
Operating Permits Section, Industrial Permits Unit
(573) 526-5449

From: Susan Fair <susanleefair@gmail.com>
Sent: Friday, January 31, 2020 10:56 AM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: CAFO Application #34322 by Z8Sow Farm

RE: CAFO Application #34322 by Z8Sow Farm
Site location Section 8, Township 59N, Range 24 W in Livingston
County

I oppose granting this CAFO a permit for the following reasons and a hearing is requested before DNR grants a permit. This CAFO would be built too close to the Thompson River Floodplain. This floodplain has sinkholes, freshwater ponds and streams. The area is prone to flooding and becomes highly saturated for long periods of times. Flooding and erosion could damage the underground manure storage pits and disseminate the hog waste that would be applied to nearby fields. I request a hearing based on these concerns for this site.

There are many other concerns with this particular site. The Poosey Conservaton Area is about 3 miles away. The Poosey Concervation area brings in thousands of visitors throughout the year for fishing, hiking, camping, horseback riding and the Poosey Annual Fall Tour. The citizens of Missouri own this area and it should be a major consideration by the state when granting CAFO permits. Our county roads and bridges can't handle the wear and tear of the added semi traffic, especially if the

Trenton Farm CAFO just north on Highway W in Grundy County is built.

I look forward to a hearing.

Susan Fair
816-289-9158
5888 Hwy Y
Chillicothe MO 64601

RECEIVED
MAR 17 2020
Water Protection Program

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Tara Shippe". The signature is written in a cursive style with a long horizontal flourish at the end.

Wray, Gorden

From: Son, Vicky
Sent: Thursday, January 30, 2020 9:35 AM
To: Wray, Gorden
Cc: Peters, Heather
Subject: FW: Request for a hearing

From: Terry McNeely <TerryMcneely@hotmail.com>
Sent: Wednesday, January 29, 2020 7:29 PM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: Request for a hearing

RE: CAFO Application #34322 by Z8Sow Farm

Site location Section 8, Township 59N, Range 24 W in Livingston County

We/ Grand River Audubon Society oppose granting this CAFO a permit.

We/ Grand River Audubon Society request a hearing by MDNR before granting a permit.

A hearing is requested for the following reasons:

- The CAFO will be built just outside the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams.
- Due to the bottleneck and levee structure in this section of the river, the area is very prone to flooding and high saturation for long periods of time.
- Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields.
- Conditions in CAFOS breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community.
- Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the west.

I look forward to a hearing.

Name Terry McNeely (President GRAS)

phone # 660-828-4215

address 851 Glenwood Chillicothe, Mo 64601

Additional effects of this a CAFO in this area are as follows:

- The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, comping, recreation and an annual Tour of Poosey.

- Property values have been shown to decrease by up to 88% for properties adjacent to CAFOS, and can even be impacted for up to 7 miles surrounding the operation.
- County roads will face significant wear from heavy truckloads hauling hogs and feed.
- If United Hog Systems is looking to expand to Livingston County, this could be just the first of several large hog operations proposed for the area.

Terry McNeely
25843 Grate Ave
Jameson, MO 64647
Davies County

January 31, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED

FEB 10 2020

Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

We are requesting a public hearing for review of this matter.

Sincerely,

Verson Wassher

As a resident located near the proposed site, I share the same feelings, as expressed by my fellow neighbors. As a Livingston Co. resident I ask for special consideration before final approval is allowed.

VEW

RECEIVED

MAR 13 2020

Water Protection Program

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,



January 17, 2020

TO: Department of Natural Resources

Re: Hog Confinement Operation in northwest Livingston County MO To be built by United Hog Systems

Proposed location: Section 8, Township 59N, Range 24W, Livingston CO,MO

Dear Members of DNR;

We are opposed to the potential Hog confinement operation being located in our neighborhood.

Studies show the horrendous odors, fumes, and gases put off by confinement operations has a huge impact on residence and many health issues related to confinement operations. Residents here do not want our way of life destroyed by some large cooperation that does not live here nor value our way of life. It violates our basic human rights to live and enjoy what God created.

A hog confinement operation would change everything about what is held dear to the hearts and families here. It would devalue our property for any future desires to sell or improve on our land. Studies show that the closer to a hog operation a home/property is, the more the value is affected in a decrease in property values from 10% up to 50%. Farm ground in this area has increased in value over the past 20 years in some cases, right here in this area from \$1000 per acre to \$3000 per acre. A hog confinement operation would be detrimental to landowners here.

Landowners here represent a wide variety of families from young to old. Many of us have jobs in town that range from nurse practitioner; fire chief; social worker; banking; prison employee; mechanic; factory workers; and many more. Some dabble at farming to supplement their income or just for fun. Some have retired here, some have returned home to retire here or have plans already in motion to retire here. Your hog operation would have a negative effect on all of us and our community.

We want to be heard and request a public hearing on the matter.

You may contact us at 660-646-9069 or 660-646-7204, Allen and Christal Reeter.

Sincerely,



Allen Reeter

3167 LIV 531

Chillicothe, MO 64601

660-973-2820

RECEIVED
JAN 27 2020
Water Protection Program

Wray, Gorden

From: Tyann Cox <tc Cox@trentonr9.k12.mo.us>
Sent: Tuesday, February 25, 2020 12:59 PM
To: Wray, Gorden
Subject: Livingston County CAFO

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Wray,

We live north of the CAFO that is being proposed in Livingston County by United Hog Systems and we have great concerns about that being located near our neighbors and just south of our home and acreage. We request that there be a public hearing to discuss the concerns of this CAFO.

Sincerely,

Adrian and Tyann Cox
496 SW HWY W
Trenton, MO 64683

March 1, 2020

RECEIVED
MAR 12 2020
Water Protection Program

To whom it concerns,

We are the property owners adjacent to the proposed location. We have worked hard to have an income producing farm through the many different enterprises. We are organically driven raising pasture/forested hogs, custom grazed cattle, pasture raised meat birds, free ranged eggs, vegetables, and hemp. So as you can imagine we would have some concerns with a CAFO moving in next to us. Concerns about disease transmission from their hogs to ours, fly load to our pesticide free operation, quality of water and contamination to our water table. We have many water seeps on our property as does the proposed location. The proposed location also has a well with yards of where the building are to go; a direct line to contaminating our water. The proposed location has highly erodible soil where current farming practices take place. The NRCS office has categorized this property as having Lock Springs type soil and highly recommend no buildings be built at this location that contain a basement or concrete pit which this operation will be using to hold manure.

We request a public meeting be held those in community and our concerns to be heard.

Thank you for your time,

Andrew and Lisa Geiser

Wray, Gorden

From: DNR.CAFO
Sent: Friday, January 31, 2020 12:34 PM
To: Wray, Gorden
Cc: Peters, Heather
Subject: FW:

From: Billie Fair <wfair@windjammercable.net>
Sent: Friday, January 31, 2020 11:51 AM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject:

RE: CAFO Application #34322 by Z8Sow Farm
Site location Section 8, Township 59N, Range 24 W in Livingston
County

I oppose granting this CAFO a permit for the following reasons and a hearing is requested before DNR grants a permit. This CAFO would be built too close to the Thompson River Floodplain. This floodplain has sinkholes, freshwater ponds and streams. The area is prone to flooding and becomes highly saturated for long periods of times. Flooding and erosion could damage the underground manure storage pits and disseminate the hog waste that would be applied to nearby fields. I request a hearing based on these concerns for this site.

There are many other concerns with this particular site. The Poosey Conservaton Area is about 3 miles away. The Poosey Concervation area brings in thousands of visitors throughout the year for fishing, hiking, camping, horseback riding and the Poosey Annual Fall Tour. The citizens of Missouri own this area and it should be a major consideration by the state when granting CAFO permits. Our county roads and bridges can't handle the wear and tear of the added semi traffic, especially if the Trenton Farm CAFO just north on Highway W in Grundy County is built.

I look forward to a hearing.

Billie Fair

906 Sunnyview

Chillicothe MO 64601

RECEIVED

MAR 02 2020

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,


8265 Hwy A
Cliftonville, MO 64601

February 17, 2020

Environmental Water Protection Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 03 2020
Water Protection Program

Dear Gorden Wray,

We live at 193 SW Plum Lane, Trenton Missouri, Grundy County. Our home is a family farm which has been in the family for 7 generations, 160 years. As a family, my husband and I, and my adult sister who is blind and has developmental disabilities live in the home that has been in my husbands family since the late 1800's. We live and enjoy this community and find our home a gathering place for our friends, family and neighbors as well as our out of state friends and family who come to vacation in the spring as well as in the fall. We have enjoyed days at Punkin Center, at our cousins homes up and down W blacktop, attend church at Shelburne Baptist, visit Possey National Forest, and take riding therapy lessons with Patti Gillham at Green Acres Riding Center. We raise our own beef and sell under the community derived name of Shelburne Hills Farm. Our ancestors named the Shelburne community as well as founding members of the Shelburne church.

This information gives you an idea of the connection we have to this area. As a result we have very strong feelings in regards to the proposed Hog operation under the name of Z-8 Sow Farm. As you know we have been fearful of the Hog operation that is proposed to the north of our farm as well. It seems a bitter pill to have two operations proposed one to the north and one to the south of our home. Both by "Owners" that are not living or working in this area, or even within our local counties. The great economic advantage these are to bring to our area seems a bit like fairy dust. Unlike our farm or our neighbors farms sales tax would not be applied to our counties.

Page 2

We have rented the ground across from the area proposed by Z-8 Sow Farm to run cattle. If this hog operation were permitted we would be anxious about having cattle across the road to be exposed to flies and possible contaminants from the carcasses or run off. As a matter of fact we are no longer going to rent that ground for those very reasons.

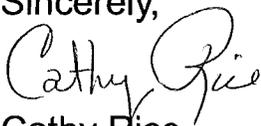
You may be unaware of the flooding damage which occurred during the LARGE flood last year, 2019. During that flood many acres were washed away as the Thompson River cut into the land. That land is currently still showing on the Google aerial map which is now somewhere down river. Roads were cut off and travel in or out of the area was very limited for days on end. How is that addressed within the plan? Also looking at the aerial Google map there are very large wash outs that are quite evident on the property that would be the ground the facility would be built upon. How are those addressed, since those would be a natural access to water ways which would take any runoff or spillage to the Thompson River which connects to the Grand in a few miles.? How is DNR protecting those water ways which directly dump into the Thompson River?

We knew upon moving here that we were moving to a flood plain that flooded frequently. Our farming plans include what to do in the event of a flood to keep our animals safe, fed, and cared for. It seems important that a facility of this size should be able to show how they plan to care for their animals. One thing we did not factor into our plans would be that we would worry that our home would be near large quantities of hog manure twice a year, of which there is no legal recourse. Our family would appreciate the opportunity to hear answers to these questions within a public hearing.

Thank you for your attention to this situation.

I appreciate your time reading and considering the implications this Hog operation will have on our life.

Sincerely,



Cathy Rice
193 SW Plum Lane
Trenton, MO 64683

January 17, 2020

TO: Department of Natural Resources

Re: Hog Confinement Operation in northwest Livingston County MO To be built by United Hog Systems

Proposed location: Section 8, Township 59N, Range 24W, Livingston CO,MO

RECEIVED
JAN 27 2020
Water Protection Program

Dear Members of DNR;

We are opposed to the potential Hog confinement operation being located in our neighborhood.

Studies show the horrendous odors, fumes, and gases put off by confinement operations has a huge impact on residence and many health issues related to confinement operations. Residents here do not want our way of life destroyed by some large cooperation that does not live here nor value our way of life. It violates our basic human rights to live and enjoy what God created.

A hog confinement operation would change everything about what is held dear to the hearts and families here. It would devalue our property for any future desires to sell or improve on our land. Studies show that the closer to a hog operation a home/property is, the more the value is affected in a decrease in property values from 10% up to 50%. Farm ground in this area has increased in value over the past 20 years in some cases, right here in this area from \$1000 per acre to \$3000 per acre. A hog confinement operation would be detrimental to landowners here.

Landowners here represent a wide variety of families from young to old. Many of us have jobs in town that range from nurse practitioner; fire chief; social worker; banking; prison employee; mechanic; factory workers; and many more. Some dabble at farming to supplement their income or just for fun. Some have retired here, some have returned home to retire here or have plans already in motion to retire here. Your hog operation would have a negative effect on all of us and our community.

We want to be heard and request a public hearing on the matter.

You may contact us at 660-646-9069 or 660-646-7204, Allen and Christal Reeter.

Sincerely,



Christal Reeter

3167 LIV 531

Chillicothe, MO 64601

660-646-9069

Wray, Gorden

From: DNR.CAFO
Sent: Monday, February 3, 2020 3:11 PM
To: Wray, Gorden
Subject: FW: Letter in opposition

Heather Peters
Missouri Department of Natural Resources
Water Protection Program
Operating Permits Section, Industrial Permits Unit
(573) 526-5449

From: Linda <btrammel@greenhills.net>
Sent: Saturday, February 1, 2020 5:05 PM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: Letter in opposition

Dear Sir and Madam,

RE: CAFO Application #34322 by Z8Sow Farm

Site location Section 8, Township 59N, Range 24 W in Livingston County

We oppose granting this CAFO a permit.

We request a hearing by MDNR before granting a permit.

A hearing is requested for the following reasons:

- The CAFO will be built just outside the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams.
- Due to the bottleneck and levee structure in this section of the river, the area is very prone to flooding and high saturation for long periods of time.
- Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields.
- Conditions in CAFOS breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community.
- Air emissions and water contamination threaten the health and future of established organic farmers in the area, as well as Poosey Conservation Area, just 3.5 miles to the west.

Bruce and Linda Trammell

Phone # 816-284-2509

Address 330 SE Dodgers Dr Kingston, MO 64650

Additional effects of this a CAFO in this area are as follows:

- The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation and an annual Tour of Poosey.
- Property values have been shown to decrease by up to 88% for properties adjacent to CAFOS, and can even be impacted for up to 7 miles surrounding the operation.
- County roads will face significant wear from heavy truckloads hauling hogs and feed.
- If United Hog Systems is looking to expand to Livingston County, this could be just the first of several large hog operations proposed for the area.

Thank you for your consideration,
Bruce and Linda Trammell

TO: Department of Natural Resources

Re: Hog Confinement Operation in northwest Livingston County MO To be built by United Hog Systems

Proposed location: Section 8, Township 59N, Range 24W, Livingston CO,MO

February 11, 2020

Dear Members of DNR;

We are opposed to the potential hog confinement operation that is considering property in our neighborhood for the following reasons.

The site of the proposed hog confinement operation borders property we own on the west and north side of our property. We are cattle farmers and pasture our cattle on this property and our cattle are dependent on water from creeks and ponds located on my property.

These ponds and creeks are fed by runoff from creeks that run through the property of the proposed site. These ponds and creeks are also fed by underground streams that are shared with those on the proposed site. Therefore, anything that is done to that property, has the potential to affect my property as well.

This property is also in a flood plain, runoff flows directly into the river located very near this location- less than a mile.

We are concerned about leaching to groundwater where it may degrade water quality. Contamination caused by runoff can be chemical – nitrates and phosphates – and/or biological – bacteria, viruses and parasites. All of which could be harmful to our cattle.

With last year's flooding, the river is eating away at property on our side of the river, in this location. There used to be property separating us and the river- including a road. That property and road no longer exist and the river is now eating away at our property- in the direction of this proposed site. Soils maps show the soil in this area is of very poor quality and not likely to support a concrete structure without eventually cracking- leaking the contents of the manure pits into our ground.

The runoff then flows directly through our property and into the Thompson river which now borders our property on the east. Notice the map and the large horse shoe in the river at this location. Everything down river will also be directly affected, including the city and residence of Chillicothe and all of Livingston County.

Last year flooding and raised river levels from numerous rain events, took an enormous amount of runoff water into the river.

We had redone the pond on our property- a rather large pond. It was finished on a Tuesday. The following Wednesday heavy rainfall began and by that Thursday the pond was not just filled, it was overflowing. This runoff that filled the pond, came directly off the proposed property site. The dangers this site could cause to us personally and to anyone in the area is of GREAT concern.

We want to be heard and request a public hearing on the matter.

You may contact us at 660-646-9069 or 660-646-7204, Allen and Christal Reeter; 3167 Liv 531, Chillicothe.

Sincerely,



RECEIVED

FEB 28 2020

Water Protection Program

RECEIVED

FEB 24 2020

Water Protection Program

January 31, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED

FEB 28 2020

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,

Mr & Mrs Delbert Reeter
8213 L18 506
Chillicothe, MO. 64601

RE: CAFO Application GS10606

by Z B Sow Farm

Missouri Department of Natural Resources

P. O. Box 176

Jefferson City, MO 65102

RECEIVED
MAR 10 2020
Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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We are requesting a public hearing for review of this matter.

Sincerely,



RE: CAFO Application GS10606
by 2 8 Sow Farm

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

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We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED
MAR 10 2020
Water Protection Program

RE: CAFO Application GS10606

by Z & Son Farm

Missouri Department of Natural Resources

P. O. Box 176

Jefferson City, MO 65102

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

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We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED

MAR 10 2020

Water Protection Program

RE: CAFO Application GS10606
by Z & Sow Farm

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

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Sincerely,



RECEIVED
MAR 10 2020
Water Protection Program

RE: CAFO Application 6510606
by Z 8 Sow Farm

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

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Sincerely,



RECEIVED

MAR 10 2020

Water Protection Program

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by Z 8 Sow Farm

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

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Sincerely,



RECEIVED
MAR 10 2020
Water Protection Program

RE: CAFO Application GS 10606 by
Z & Sow Farm

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

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We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED
MAR 10 2020
Water Protection Program

RE: CAFO Application GS10606

by 28 Sow Farm

Missouri Department of Natural Resources

P. O. Box 176

Jefferson City, MO 65102

To whom it may concern:

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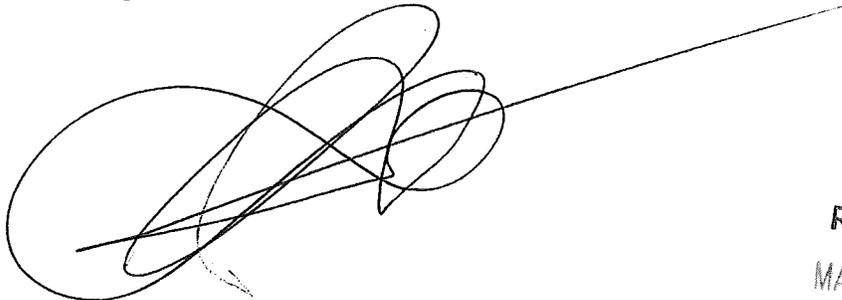
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We are requesting a public hearing for review of this matter.

Sincerely,

A large, stylized handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

RECEIVED

MAR 10 2020

Water Protection Program

February 20, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED

2020 MAR 11 AM 11:52

AIR POLLUTION
CONTROL PGM

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED

MAR 13 2020

Water Protection Program

RECEIVED

FEB 10 2020

Water Protection Program

January 31, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

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We are requesting a public hearing for review of this matter.

Sincerely,



Tracy Bradley

February 20, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 11 2020
Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

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We are requesting a public hearing for review of this matter.

Sincerely,



February 24, 2020
Environmental Water Protection Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 09 2020
Water Protection Program

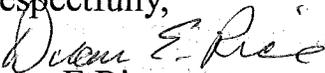
Dear Gorden Wray,

Gorden, I want to take this moment to say that I believe you have an extremely difficult job. To balance the safety of Water Protection against the need for allowing Large Animal Confinement Facilities is not a job I would ever care to have. With this said, as you well know, our home would become surrounded by the manure, (if either CAFO, Trenton Farms or Z-8 Farms would be open for business.) There are suggestions within the application process, but no true regulations for the applying manure once it has left the facility. I would have little to no recourse to take if a neighbor farmer chooses to over apply or apply manure before a forecast of rain or flooding. What is the recommendation of MDNR for a situation which is very likely to occur? How could I take measurements of samples? It's not my property. What penalty or what is in place to protect our ground? What protects our home, our crops, our water? How is an operation that has been called upon by DNR in the past, allowed to come to Northern Missouri and implement their ideal of Hog Farming? Both farmers, are not even from this area. If this is such a great idea why wouldn't a local farmer propose such an operation? This seems like bad business in my minds eye. How can legislation or the DNR regulations be created to provide safety? I'm sure you believe that DNR has too many regulations already, but how do those protect folks who would be greatly impacted? It appears from the outside looking in that the regulations are put in place to protect people who want a CAFO where ever they please.

I am judgmental. That goes without saying. The past 5 years have been a constant worry and countless hours trying to get anyone in authority to hear my fears and help make sense of what appears to be a lack of caring for individuals and all about BIG Corporate Farmers. We won't even add in the cost of just trying to protect ourselves and our community.

Please address these and other matters within a Public Hearing so everyone can understand why MDNR feels granting these applications are a good idea.

Respectfully,


Dean E Rice

193 Plum Lane, Trenton, MO 64683

January 12, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
JAN 27 2020
Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, our quality of life, and the damage to our roadways.

We have lived on this property for the majority of our married lives, 60 years. This farm has been in the Reeter family for generations. We enjoy our rural community and the peace and quite it provides. We both have asthma. The increased dust from traffic on our gravel road will no doubt adversely affect this, as will the gasses/chemicals emitted by large amounts of hog manure and the animal dander in such close proximity to our home.

The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern. My husband has been an avid outdoorsman his entire life and the thought of what a contamination event would do to our local wildlife population is unthinkable. Over the past few years we have finally seen an increase in the number of wild pheasants and eagles in the area. The CAFO would no doubt adversely affect their habitats.

My husband and I built our home here, raised our family here, and now have the pleasure of watching it grow with our grandchildren and great-grandchildren. Our hope is to leave them a legacy our hard work took a lifetime to build and proceeding the placing the hog confinement in this location will have dire consequences on this. What can we do to contest authority for the CAFO to be authorized/licensed? What can the DNR do to either regulate CAFOs in general and this CAFO in particular? Is there anything else we can do to prevent this impending disaster? We will be doing everything in our power to prevent this.

Sincerely,



Delber and Joyce Reeter

March 6, 2020

Department of Natural Resources

Re: CAFO Application GS10606 by Z8Sow Farm
Site Location Section 8, Township 59N, Range 24 W in Livingston County

To Whom It May Concern:

I oppose granting this CAFO a permit. I request a hearing by MDNR before granting a permit. A hearing is requested for the following reasons:

- The CAFO will be built just outside the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams.
- Due to the bottleneck and levee structure in this section of the river, the area is very prone to flooding and high saturation for long periods of time.
- Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields.
- Conditions in CAFOS breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community.
- Air emissions and water contamination threaten the health and future of established organic farmers in the area, as well as Poosey Conservation Area, just 3.5 miles to the west.

I look forward to a hearing.

Sincerely,

Dennis Sturquess

Dennis Sturquess

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

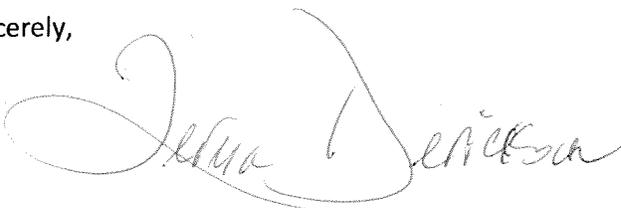
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We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED
MAR 10 2020
Water Protection Program

Wray, Gorden

From: Abbott, Michael
Sent: Thursday, March 12, 2020 7:49 AM
To: Wray, Gorden
Cc: Peters, Heather
Subject: FW:

Follow Up Flag: Follow up
Flag Status: Flagged

Comment for Livingston CAFO.

Michael J. Abbott, Chief
Operating Permit Section
573-526-5781
michael.abbott@dnr.mo.gov

We'd like your feedback on the service you received from the Missouri Department of Natural Resources. Please consider taking a few minutes to complete the department's Customer Satisfaction Survey at <https://www.surveymonkey.com/r/MoDNRsurvey>. Thank you.

From: Wieberg, Chris <chris.wieberg@dnr.mo.gov>
Sent: Thursday, March 12, 2020 7:38 AM
To: Peters, Heather <heather.peters@dnr.mo.gov>; Abbott, Michael <michael.abbott@dnr.mo.gov>
Subject: FW:

FYA

Thanks,

Chris Wieberg
Director
Water Protection Program
573-522-9912

We'd like your feedback on the service you received from the Missouri Department of Natural Resources. Please consider taking a few minutes to complete the department's Customer Satisfaction Survey at <https://www.surveymonkey.com/r/MoDNRsurvey>. Thank you.

From: Bert Wire <wire360@gmail.com>
Sent: Wednesday, March 11, 2020 10:49 PM
To: Wieberg, Chris <chris.wieberg@dnr.mo.gov>
Subject:

Subject: cafo application #G510606Z8. This is a concerning the above application in reference to farm site location section 8, township 59N, range 24W in Livingston county. Based on the fact that this is located within a area that is predominantly composed of "Lockspring " soil type, I am requesting that you deny this application, this type of soil is not conducive to logoon structure that are required for this cafo. Again I ask that you ,please protect our soil and water natural resources. This site is going too be on one of the biggest under ground water aquifer! Respectively, bert wire 8511 liv chillicothe mo 64601 cell 515-491-0886

Wray, Gorden

From: DNR.CAFO
Sent: Friday, March 6, 2020 9:14 AM
To: Wray, Gorden
Subject: FW: pubic hearing

Follow Up Flag: Follow up
Flag Status: Flagged

From: Doe Sperry <doesperry08@yahoo.com>
Sent: Thursday, March 5, 2020 11:04 PM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: pubic hearing

Concerning the CAFO application #G510606Z8. Farm site location: Section 8, township 59N 24W, Livingston CO MO
The local water needs to be protected from this proposed CAFO. There are many natural springs that local residents used for drinking water or to keep our ponds and lakes filled. There are so many things wrong with this whole thing. Please protect the quality of our water and our way of life. Thank you.

Dick and Dona Sperry
6360 liv 531
Chillicothe, Mo 64601

March 2, 2020

Gordon Wray
Water Protection Program
Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, Missouri 65102-0176

RECEIVED
MAR 09 2020
Water Protection Program

Dear Mr. Wray:

We oppose the proposed permit for the United Hog Z-8 Sow Farm in Section 8, Township 59N, Range 24W in Livingston County. There are many reasons, including the threat to our already crumbling asphalt, lettered state highways in the area, but we will focus on the environmental impacts.

We are row crop and cattle farmers in the northwest corner of Livingston County. One of the first settlements in the area in the 1830s was Springhill. It was named Springhill because of the abundance of shallow, freshwater springs in the northern Livingston County area. Those springs are still in abundance. Rural public water systems are not available to some of us, and we rely on those fresh water springs for our drinking and personal water and livestock water (We maintain six wells for four households and two livestock waterers). Our concern is not only contamination of the springs and aquifers in the area from the CAFO itself, but also the manure applications that may contaminate springs and wells.

Also, please consider the threat of a falling water table in the area. CAFOs typically don't use the public water system in the area. They dig deep wells and they utilize millions of gallons of water. What kind of effect will that have on area residents' water supply, but also other local communities and towns? Are you comfortable saying this CAFO's water use will not adversely affect neighbors and communities in the area? United Hog System attorney Robert Brundage stated in a public meeting that more CAFOs are wanting to build in Livingston County. How will a proliferation of CAFOs impact our water table in northern Livingston County?

We believe you have received NRCS maps and reports showing soils in the immediate area of the proposed CAFO are poorly suited for the construction and operation of the proposed subsurface containment structures. Please consider and research that cracks in the concrete walls of the proposed manure pits will likely result from the shallow groundwater table, the shrink-swell characteristics of these 'Lock Springs silty clay loam' soils, the depth to the saturation zone, and unstable excavation walls.

And finally please consider the threat to Poosey Conservation Area. Poosey Conservation Area is funded by Missouri tax payers. Thousands of Missourians and even out-of-state residents utilize the 5,863 acre area for hunting, fishing, hiking, bike riding, horseback riding, canoeing, nature watching, tours and much more. It's a place that connects people with the outdoors. Are you willing to potentially sacrifice a Missouri gem, that is highly used by the public, for the odor, noise, pollution and road deterioration a CAFO brings to the area?

We are requesting not only a public hearing for you to hear our concerns, but a thorough investigation of the impact to our water table and Poosey Conservation Area. Regards,

Barbara Doughty

Barbara Doughty

Doug Doughty

Douglas P. Doughty
4787 LIV 503
Chillicothe, MO 64601
660-247-1504

RECEIVED

FEB 06 2020

December 31, 2020

Water Protection Program

Missouri Department of Natural Resources
PO Box 176
Jefferson City, MO 65102

Dear Sirs:

I am writing in reference of a proposed Hog confinement wanting to be build in Livingston County. This site is just over the fence of my property and I oppose this operation. The group is United Hog systems.

There are many homes in close proximity to this site and will be negativity effected by the traffic, odor and disruption to their lives let alone the devaluation to their homes and property, mine included!

I hope you consider the impact to all of the neighbors and families and farm values when you consider issuing this permit.

Dinah Sturgeon
1804 Highway W
Trenton, MO 64683

March 2, 2020

Gordon Wray
Water Protection Program
Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, Missouri 65102-0176

RECEIVED
MAR 09 2020
Water Protection Program

Dear Mr. Wray:

We oppose the proposed permit for the United Hog Z-8 Sow Farm in Section 8, Township 59N, Range 24W in Livingston County. There are many reasons, including the threat to our already crumbling asphalt, lettered state highways in the area, but we will focus on the environmental impacts.

We are row crop and cattle farmers in the northwest corner of Livingston County. One of the first settlements in the area in the 1830s was Springhill. It was named Springhill because of the abundance of shallow, freshwater springs in the northern Livingston County area. Those springs are still in abundance. Rural public water systems are not available to some of us, and we rely on those fresh water springs for our drinking and personal water and livestock water (We maintain six wells for four households and two livestock waterers). Our concern is not only contamination of the springs and aquifers in the area from the CAFO itself, but also the manure applications that may contaminate springs and wells.

Also, please consider the threat of a falling water table in the area. CAFOs typically don't use the public water system in the area. They dig deep wells and they utilize millions of gallons of water. What kind of effect will that have on area residents' water supply, but also other local communities and towns? Are you comfortable saying this CAFO's water use will not adversely affect neighbors and communities in the area? United Hog System attorney Robert Brundage stated in a public meeting that more CAFOs are wanting to build in Livingston County. How will a proliferation of CAFOs impact our water table in northern Livingston County?

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And finally please consider the threat to Poosey Conservation Area. Poosey Conservation Area is funded by Missouri tax payers. Thousands of Missourians and even out-of-state residents utilize the 5,863 acre area for hunting, fishing, hiking, bike riding, horseback riding, canoeing, nature watching, tours and much more. It's a place that connects people with the outdoors. Are you willing to potentially sacrifice a Missouri gem, that is highly used by the public, for the odor, noise, pollution and road deterioration a CAFO brings to the area?

We are requesting not only a public hearing for you to hear our concerns, but a thorough investigation of the impact to our water table and Poosey Conservation Area. Regards,

Barbara Doughty

Barbara Doughty

Doug Doughty

Douglas P. Doughty
4787 LIV 503
Chillicothe, MO 64601
660-247-1504

March 7, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 10 2020
Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

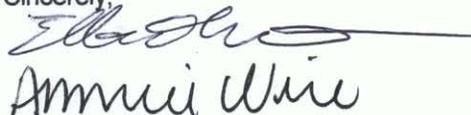
The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

We own livestock, and are concerned about potential ill effects they may suffer as a result of being in close proximity to the CAFO, in part due to the increased fly population that is inevitable when that number of livestock is in one location.

Please review the enclosed information regarding the soil analysis performed on the proposed site and the recommendations by NRCS. The soil type is not suitable for the proposed methods of storing the waste produced by the CAFO, due to the shrink/swell rate and inevitable failure of any subterranean pits.

My husband and I built our home here 8 years ago after purchasing property from my family, who has lived in this area for generations. The thought that my family's health and safety is at risk due to this proposed CAFO is unacceptable. What can we do to contest authority for the CAFO to be authorized/licensed? What can the DNR do to either regulate CAFOs in general and this CAFO in particular? Is there anything else we can do to prevent this impending disaster? We will be doing everything in our power to prevent this.

Sincerely,



Elbert and Ammie Wire

8511 Liv 506
Chillicothe, MO
64601

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Building Site Development

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Dwellings With Basements

Dwellings are single-family houses of three stories or less. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet.



The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification of the soil. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the

Custom Soil Resource Report

Across-slope shape: Convex
Ecological site: Loess Upland Prairie (R109XY002MO)
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: Yes

30157—Locksprings silty clay loam, 9 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2qnsd
Elevation: 680 to 1,500 feet
Mean annual precipitation: 35 to 41 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 177 to 209 days
Farmland classification: Not prime farmland

Map Unit Composition

Locksprings and similar soils: 90 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Locksprings

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from limestone and shale

Typical profile

A - 0 to 7 inches: silty clay loam
Bt - 7 to 28 inches: very bouldery clay
R - 28 to 80 inches: bedrock

Properties and qualities

Slope: 9 to 30 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Map Unit Legend (CAFO Site - Soil Classification)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
10116	Sampsel silty clay loam, 2 to 5 percent slopes	15.9	1.8%
30042	Caleb silt loam, 9 to 14 percent slopes, eroded	25.6	2.8%
30046	Chillicothe silty clay loam, 5 to 9 percent slopes, eroded	17.8	2.0%
30119	Lagonda silty clay loam, 2 to 5 percent slopes, eroded	72.6	8.0%
30120	Lagonda silty clay loam, 5 to 9 percent slopes, eroded	131.6	14.5%
30157	Locksprings silty clay loam, 9 to 30 percent slopes	414.7	45.7%
30220	Weller silt loam, bench, 2 to 7 percent slopes	0.3	0.0%
36038	Tice silt loam, overwash, 0 to 2 percent slopes, frequently flooded	34.0	3.8%
36051	Zook silty clay loam, overwash, 0 to 2 percent slopes, frequently flooded	26.0	2.9%
36060	Carlow silty clay, 0 to 2 percent slopes, frequently flooded	41.8	4.6%
36096	Zook silty clay loam, 1 to 5 percent slopes, frequently flooded	88.5	9.8%
66004	Dockery silt loam, 0 to 2 percent slopes, frequently flooded	37.5	4.1%
Totals for Area of Interest		906.4	100.0%



Map Unit Descriptions (CAFO Site - Soil Classification)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the

Rating Options—Dwellings With Basements (CAFO Site)

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Shallow Excavations



Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of

MAP LEGEND

- Area of Interest (AOI)
 - Area of Interest (AOI) 
 - Background  Aerial Photography
- Soils
 - Soil Rating Polygons**
 - Very limited 
 - Somewhat limited 
 - Not limited 
 - Not rated or not available 
 - Soil Rating Lines**
 - Very limited 
 - Somewhat limited 
 - Not limited 
 - Not rated or not available 
 - Soil Rating Points**
 - Very limited 
 - Somewhat limited 
 - Not limited 
 - Not rated or not available 
- Water Features
 - Streams and Canals 
- Transportation
 - Rails 
 - Interstate Highways 
 - US Routes 
 - Major Roads 
 - Local Roads 

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Livingston County, Missouri
 Survey Area Data: Version 20, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 13, 2010—Oct 17, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Custom Soil Resource Report

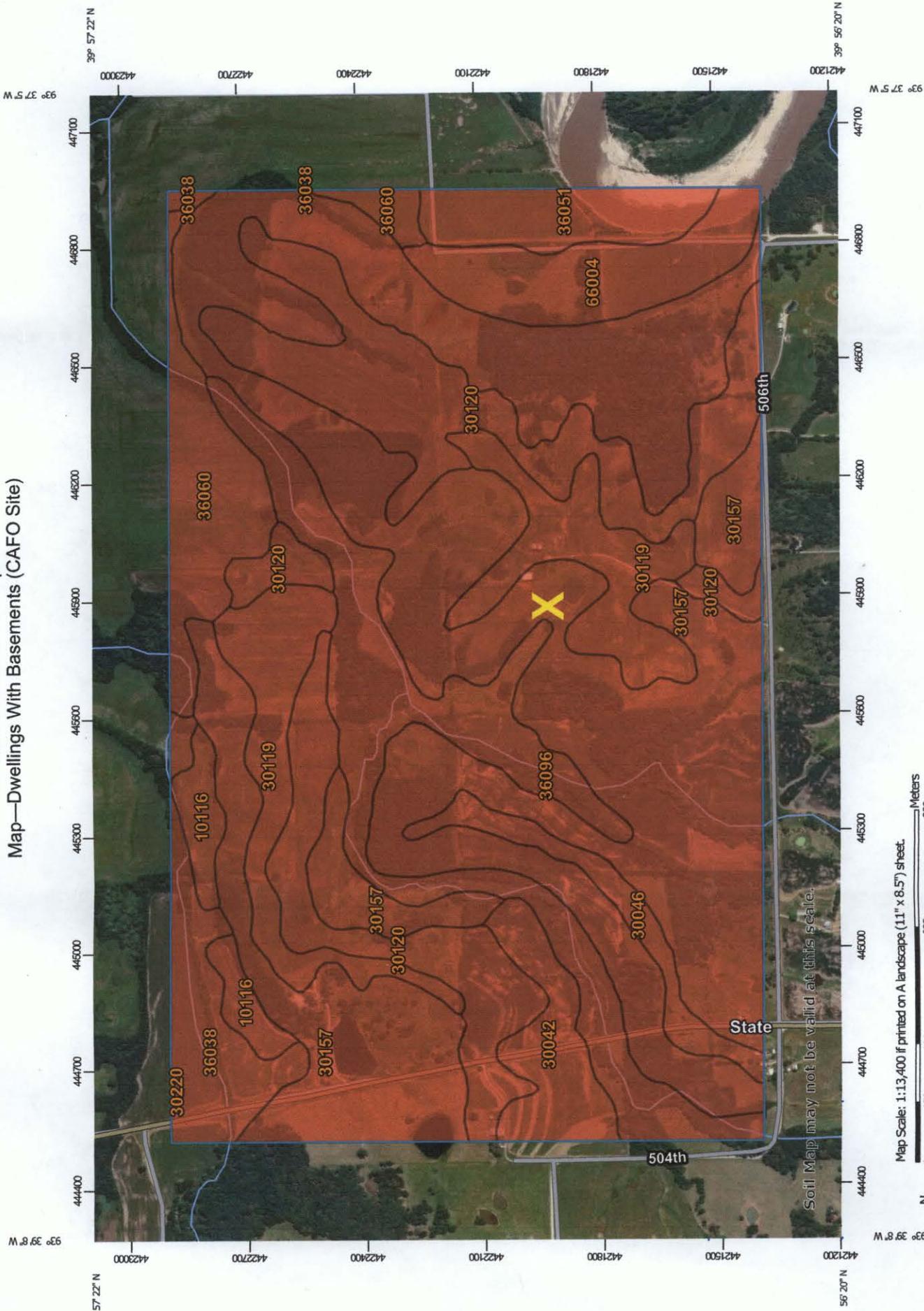
specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
 Map—Dwellings With Basements (CAFO Site)

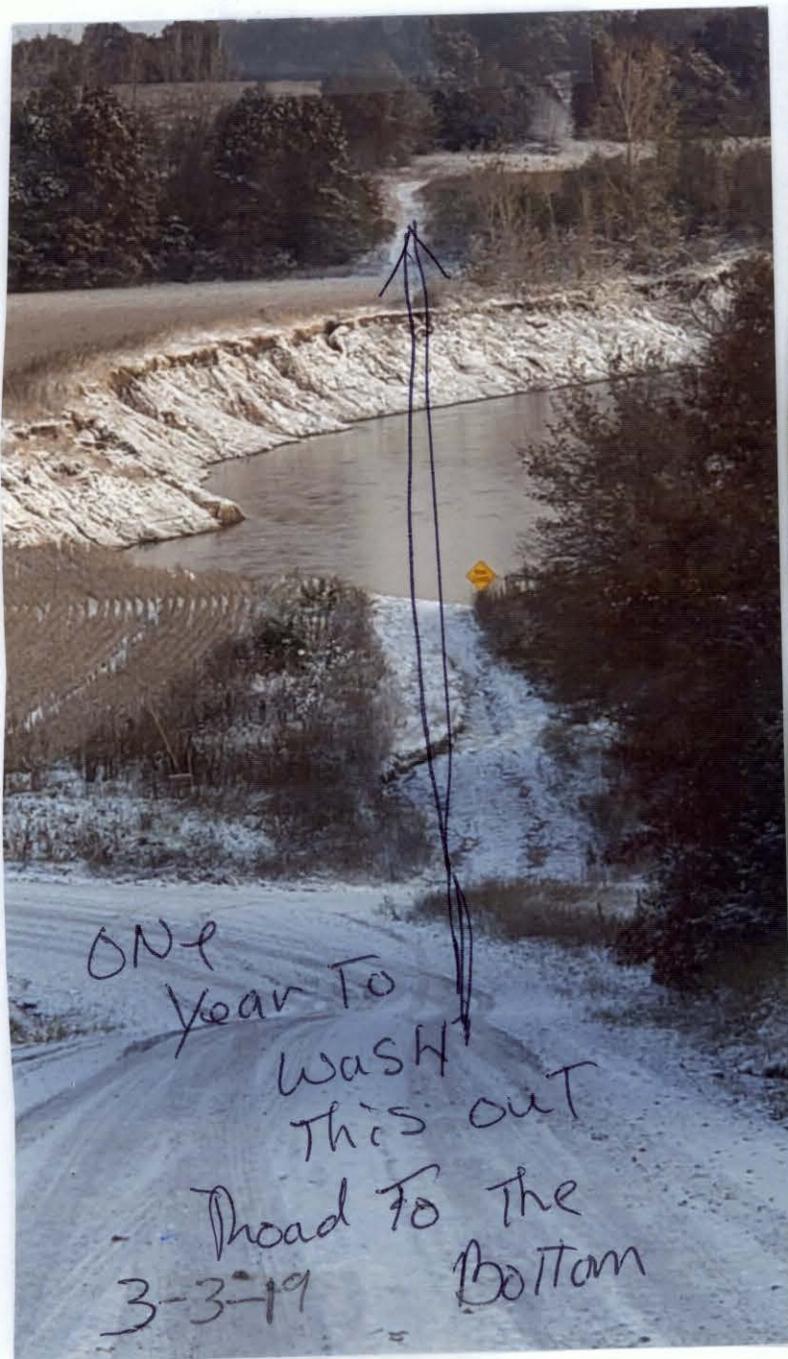


Soil Map may not be valid at this scale.

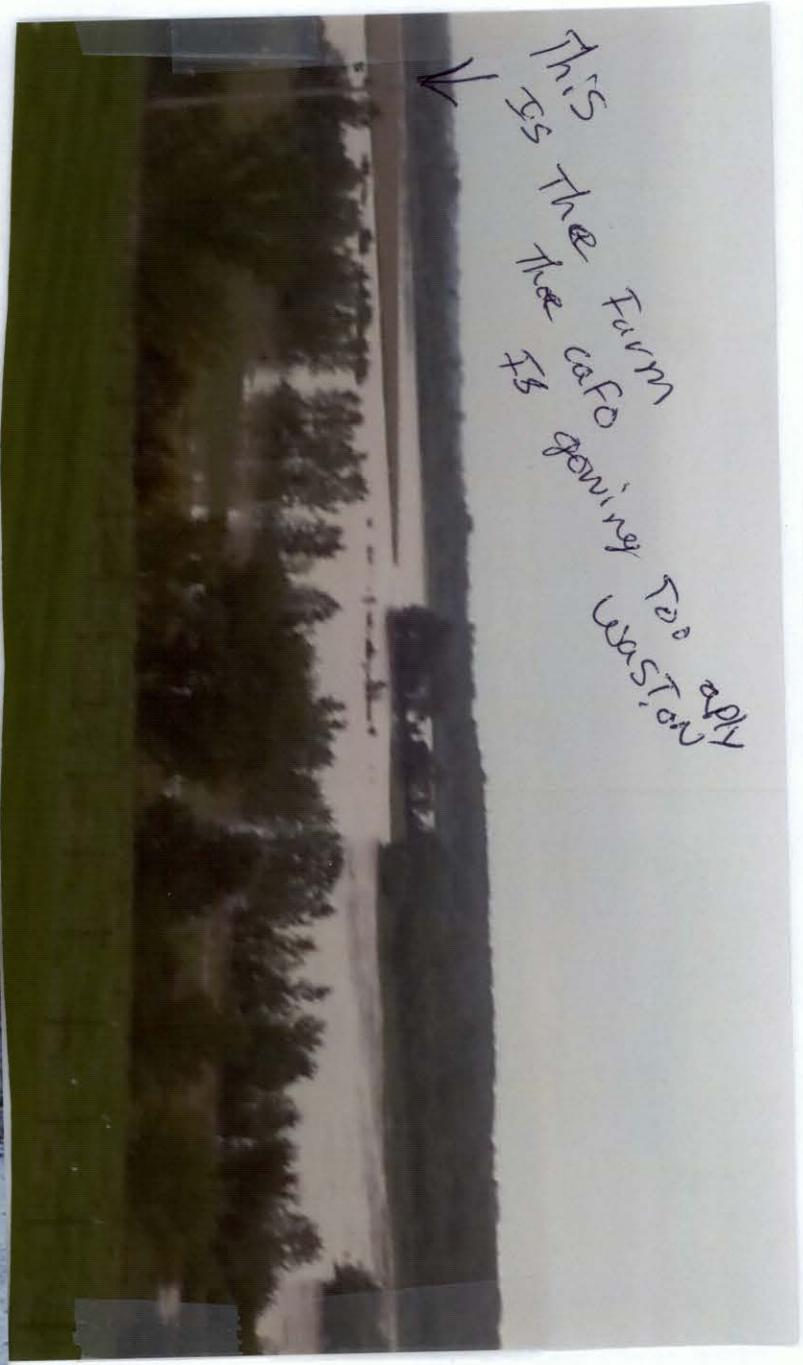
Map Scale: 1:13,400 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge ticks: UTM Zone 15N WGS84



ONLY
Year To
WASH
THIS OUT
- Road To The
3-3-19 Bottom



THIS
IS THE FARM
THE CAFO
IS GROWING TOO
FAST ON
WASTON

Wray, Gorden

From: Abbott, Michael
Sent: Thursday, March 12, 2020 7:49 AM
To: Wray, Gorden
Cc: Peters, Heather
Subject: FW:

Follow Up Flag: Follow up
Flag Status: Flagged

Comment for Livingston CAFO.

Michael J. Abbott, Chief
Operating Permit Section
573-526-5781
michael.abbott@dnr.mo.gov

We'd like your feedback on the service you received from the Missouri Department of Natural Resources. Please consider taking a few minutes to complete the department's Customer Satisfaction Survey at <https://www.surveymonkey.com/r/MoDNRsurvey>. Thank you.

From: Wieberg, Chris <chris.wieberg@dnr.mo.gov>
Sent: Thursday, March 12, 2020 7:38 AM
To: Peters, Heather <heather.peters@dnr.mo.gov>; Abbott, Michael <michael.abbott@dnr.mo.gov>
Subject: FW:

FYA

Thanks,

Chris Wieberg
Director
Water Protection Program
573-522-9912

We'd like your feedback on the service you received from the Missouri Department of Natural Resources. Please consider taking a few minutes to complete the department's Customer Satisfaction Survey at <https://www.surveymonkey.com/r/MoDNRsurvey>. Thank you.

From: Bert Wire <wire360@gmail.com>
Sent: Wednesday, March 11, 2020 10:49 PM
To: Wieberg, Chris <chris.wieberg@dnr.mo.gov>
Subject:

Subject: cafo application #G510606Z8. This is a concerning the above application in reference to farm site location section 8, township 59N, range 24W in Livingston county. Based on the fact that this is located within a area that is predominantly composed of "Lockspring " soil type, I am requesting that you deny this application, this type of soil is not conducive to logoon structure that are required for this cafo. Again I ask that you ,please protect our soil and water natural resources. This site is going too be on one of the biggest under ground water aquifer! Respectively, bert wire 8511 liv chillicothe mo 64601 cell 515-491-0886

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED
MAR 10 2020
Water Protection Program

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 02 2020
Water Protection Program

To whom it may concern:

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We are requesting a public hearing for review of this matter.

Sincerely, 



Greg P. Crawford
Cathy L. Crawford
3343 Liv 500
Jamesport MO 64648-9201

RECEIVED
FEB 24 2020
Water Protection Program

January 31, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

We are requesting a public hearing for review of this matter.

Sincerely,



Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 02 2020
Water Protection Program

To whom it may concern:

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The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely, 



Greg P. Crawford
Cathy L. Crawford
3343 Liv 500
Jamesport MO 64648-9201

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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We are requesting a public hearing for review of this matter.

Sincerely,

Jan Driffie

24353 320th St

Jamesport MO 64648

RECEIVED
MAR 09 2020
Water Protection Program



JEFFERY LAW GROUP, LLC
400 CHESTERFIELD CENTER, STE 400
CHESTERFIELD, MISSOURI 63017
WWW.JEFFERYLAWGROUP.COM

STEPHEN G. JEFFERY
(855) 915-9500 – TOLL FREE
(314) 714-6510- FAX
SJEFFERY@JEFFERYLAWGROUP.COM

February 24, 2020

Gordon Wray
Water Protection Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102-0176

Re: Comments on Proposed United Hog Z-8 Sow Farm, Livingston County

Dear Mr. Wray:

I represent Poosey Neighbors United, LLC (“Poosey Neighbors”), a community group organized to address issues regarding the proposed Z-8 Sow Farm. These comments are submitted on behalf of Poosey Neighbors.

Attached please find a Natural Resources & Conservation Service (“NRCS”), “Custom Soil Resource Report for Livingston County, Missouri,” dated February 7, 2020. This NRCS Soil Report was based on the initial identification of an “area of interest,” or “AOI,” comprised of approximately 906 acres in the immediate vicinity of the location of the proposed Z-8 facility. In this regard, page 9 of the report shows the AOI, which is located east of the Poosey Conservation Area, east of State Highway W, north of 506th Street, and west of the Thompson River, in Livingston County. Page 9 also depicts the NRCS identification of the different soil types located in the AOI. These soil types are listed on page 11 in the report.

On pages 14 - 30 of the report, NRCS describes various attributes of these different soil types. Significantly, according to the NRCS, each and every soil type identified in the AOI has an extremely shallow depth to groundwater. In fact, the depth to groundwater typically is less than 24 inches.

On pages 31 - 39 of the report, NRCS rates these different soil types for “Building Site Development.” According to the report, these “are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes.” Significantly, as shown in the map on page 33 and in the table on pages 35 - 38, all of the different soils identified in the AOI have ratings of “very limited” for Building Site Development purposes. In this regard, “very limited” means,

. . . the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Moreover, as shown by the map on page 41 and the table on pages 43 - 47, almost all the soils in the AOI - including the soils in the immediate vicinity of the proposed Z-8 facility - have ratings of “very limited” for construction of shallow excavations. In this context, NRCS defines “shallow excavations” as “trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes.”

Based on the NRCS report, it cannot be disputed that the soils in the immediate vicinity of the proposed Z-8 facility are poorly suited for the construction and operation of the proposed subsurface concrete manure containment structures. Specifically, cracks in the concrete walls of the subsurface containment structures will inevitably result from the shallow groundwater table, the shrink-swell characteristics of these soils, the depth to the saturation zone, and unstable excavation walls.¹

Concerning regulatory requirements for the proposed 12' deep subsurface concrete manure containment structures, 10 CSR 20-8.300(6) states, *inter alia*,

Construction of Tanks and Pits. Construction of tanks and pits shall meet the following requirements:

(A) Soils and Foundation. A thorough site investigation shall be made to determine the physical characteristics and suitability of the soil and foundation for the fabricated storage structure. Position the floor of the belowground storage tanks two feet (2') above the groundwater table;

Based on the very shallow depths to groundwater as identified in the NRCS report, it is not possible for the floors of the proposed 12' deep pits at the Z-8 facility to be located two feet above the groundwater table.

In addition, § 644.051.1, RSMo states, “It is unlawful for any person: (1) . . . to place or cause or permit to be placed any water contaminant in a location where it is reasonably certain to cause pollution of any waters of the state” Because of the poor soil conditions, it is reasonably likely that the proposed subsurface concrete manure containment structures will crack and be compromised. Further, based on the poor soil

¹ At the January 9, 2019 meeting of the Missouri Clean Water Commission, Commissioner Reece stated, “Based on my experience, 48 years in engineering, one thing was omitted from the testimony in that there's two types of concrete, concrete that's cracked and concrete that's gonna crack. Mr. Aley pointed out in his testimony that because of the type of soils that we have here, it's very difficult to impact those soils. And if you build a concrete structure or a tank on those soils and due to the nature of the soil, the shrinking and expanding of the soil, those basins are going to contract.” Transcript, Missouri Clean Water Commission (Jan. 9, 2019), p. 33.

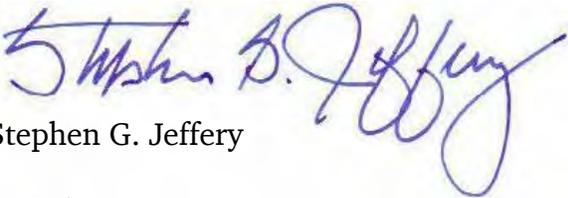
Gordon Wray
February 24, 2020
Page 3 of 3

conditions and shallow groundwater table, it is reasonably likely that the manure and other wastes that would be released from these cracks would cause pollution to the shallow groundwater, which is considered waters of the State.

Finally, because of the significant public concerns about the threat to groundwater from the proposed Z-8 facility, Poosey Neighbors requests that the Department conduct a public hearing to address these concerns.

Very truly yours,

JEFFERY LAW GROUP, LLC



Stephen G. Jeffery

SGJ:sj

cc: Poosey Neighbors United, LLC
Joel Reschley (DNR)

Enclosure

RECEIVED

FEB 06 2020

January 26, 2020

Water Protection Program

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, our quality of life, and the damage to our roadways.

We have lived on this property for more than 20 years. We enjoy our rural community and the peace and quiet it provides. Our 2 year old grandson who lives with us has asthma. The increased dust from traffic on our gravel road will no doubt adversely affect this, as will the gasses/chemicals emitted by large amounts of hog manure and the animal dander in such close proximity to our home.

The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern. My husband has been an avid outdoorsman his entire life and the thought of what a contamination event would do to our local wildlife population is unthinkable. Over the past few years we have finally seen an increase in the number of wild pheasants and eagles in the area. The CAFO would no doubt adversely affect their habitats.

My wife and I built our home here, raised our family here, and now have the pleasure of watching it grow with our grandchildren. What can we do to contest authority for the CAFO to be authorized/licensed? What can the DNR do to either regulate CAFOs in general and this CAFO in particular? Is there anything else we can do to prevent this impending disaster? We will be doing everything in our power to prevent this.

Sincerely,

Jim and Cindy King

February 20, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
2020 MAR 11 AM 11:52
AIR POLLUTION
CONTROL PGM

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

We are requesting a public hearing for review of this matter.

Sincerely,

Katie Woodworth

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MAR 13 2020

Water Protection Program

January 29, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
FEB 18 2020
Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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Sincerely,

Lynn & Brenda Fellhuth

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED

MAR 03 2020

Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

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We are requesting a public hearing for review of this matter.

Sincerely,

Judy Leitch
8265 Hwy A
Chillicothe, Mo.

64601

March 6th, 2020

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

Dear Sir or Ma'am,

I am writing about a proposed confined animal feeding operation hog barn proposed for placement in section 8, township 59N, range 24W in Livingston county, Missouri. DO not grant this CAFO a permit. This same CAFO owner, Zeyzing, had a leak in a neighboring county (Caldwell County) in 2005. The leak went for three days before it was stopped, traveled four and a half miles of stream and killed over 4100 fish.

My biggest concern is that last night, when talking to my state representative, Rusty Black, he said that there," will be mistakes," when referring to possible leaks and that," once it happens, DNR will come in. They will get a fine and clean it up." The proposed location is right on top of the aquifer and when a leak happens as Rusty Black indicated, it will contaminate the water for the entire region. The city of Chillicothe Missouri gets it's water from five ground wells near the Grand River that would be polluted by such a spill so it is not just a few rural residents that would be affected. I have read in the DNR permits and regulations for Missouri, that this CAFO would be able to dump waste only 300 feet from a water source. With the spring rains that we get, the run off from the field application of the waste would definitely drain into the water supply.

The two sites that are proposed in Livingston County, MO are approximately four miles from Poosey state park. According to the CDC report," Understanding AFO's and CAFO's," on page two that over application of livestock wastes can overload soil with macro nutrients including nitrogen and phosphorous and macro nutrients that have been added to animal feed like heavy metals. The soil that they want to build the CAFOs on is lock spring soil which as you know the saturation and drying point of this soil will lead to cement cracking and thus lead to leaks that will not only harm rural residents but the entire city of Chillicothe.

This information is taken from the following web-site: http://www.cafothebook.org/thebook_myths_8.htm

Toxic Storage "Lagoons" Lagoon storage and sprayfield applications on land are two common methods of dealing with CAFO wastes. Neither is problem-free. Spraying liquid manure onto croplands can spread viruses, bacteria, antibiotics, metals (such as zinc, arsenic, copper, and selenium),³ nitrogen, phosphorus, and other compounds that run off the land, contaminate the groundwater, travel through subterranean field drains (tiles), and pollute the atmosphere. Spraying more animal waste than the surrounding land can safely absorb is common. When lagoons burst, develop leaks, or are overwhelmed by flood events, as often happens, millions of gallons of manure reach waterways and spread microbes that can cause gastroenteritis, fevers, kidney failure, and death. One bacteria, *Pfiesteria piscicida*, produces a powerful toxin that has been responsible for massive fish kills in waters polluted by hog manure.

Also, the CDC has stated that Hepatitis E has been found in slaughter house hogs. This is another disease that will end up in the water and compromise Livingston County residents' health.

This CAFO is going to have the waste storage pit underground which leads to bacteria growth more health risks when it leaks into the ground. When it leaks and gets into the aquifer, the same CDC report sites on page four," Contaminated water can move laterally and eventually enter surface water such as rivers and streams. The city of Chillicothe, Missouri gets their water (as reported to me by a Chillicothe Municipal Utility worker) from five ground wells off of the Grand River. When this happens and nitrate levels rise to an unsafe level, Chillicothe does not have a reverse osmosis, distillation or any other process to get the nitrates out of the water. My farm runs on a well and there is an imminent danger of this pollution to my wife and I, our livestock and our family pets.

Please do not grant this CAFO a permit! I would like to have a public hearing on this matter at a time that my husband and I can attend as we work. Please schedule a public hearing!

Thank you,
Mike McLin
3800 Liv. 519
Chillicothe, MO 64601

Mike McLin

RECEIVED
MAR 10 2020
Water Protection Program

RECEIVED

FEB 13 2020

Water Protection Program

January 31, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

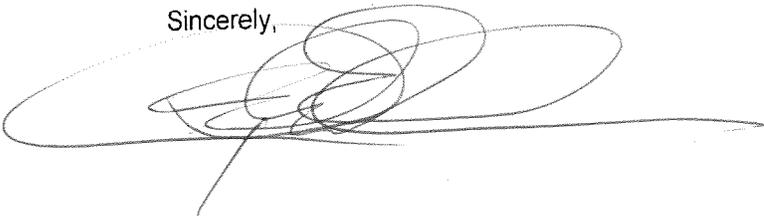
We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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We are requesting a public hearing for review of this matter.

Sincerely,

A large, stylized handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

February 28, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED

MAR 12 2020

Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just *North* ~~South~~ of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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We are requesting a public hearing for review of this matter.

Sincerely,



Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
FEB 28 2020
Water Protection Program

To whom it may concern:

I am writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59 N, Range 24 W, in Livingston County.

I oppose the placement of this operation for many reasons. Some of those reasons include the impact on personal health and local natural resources, health of livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Furthermore, the land in question sits within the northwest Missouri groundwater province which is estimated to contain 2.2% or 10.2 trillion gallons of Missouri's potable ground water. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFO's breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide, and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area which lies just three miles to the southwest of the proposed location. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreational activities.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFO's and can have an impact for up to seven miles around the operation. County roads and the lettered asphalt highways A, W, and Y will face significant wear from heavy trucks hauling concrete, supplies, hogs, feed, and manure.

This could be the first of many CAFO proposals for the area. I strongly believe this area cannot accommodate the strain the proposed CAFO would put on the infrastructure, fresh water, air and way of life.

I am requesting a public hearing for review of this matter.

Sincerely,

Loretta Raef

Loretta Raef
678 SW 40th Ave
Trenton, MO 64683

ph 660-359-6471

February 20, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

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We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED
MAR 10 2020
Water Protection Program

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED

FEB 28 2020

To whom it may concern:

Water Protection Program

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely, *Martin Cherry*

we would like a public hearing,

Thank You

*3236 Liv 531
Chillicothe, Mo.
64601*

RECEIVED

FEB 11 2020

January 31, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

We are requesting a public hearing for review of this matter.

Sincerely,

Mike
McLain
Jennifer McLain

Wray, Gorden

From: DNR.CAFO
Sent: Friday, January 31, 2020 12:33 PM
To: Wray, Gorden
Cc: Peters, Heather
Subject: FW: Livingston Co CAFO

-----Original Message-----

From: mary conrad <mconrad55@gmail.com>
Sent: Friday, January 31, 2020 11:37 AM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: Livingston Co CAFO

Please do not allow the CAFO to be built in Livingston Co.. The Thompson River area is a flood plain. Poosey Conservative Area is a much loved, widely used recreational area. Homeowners should not have to suffers the ills of property value decline. Please do the right thing. Thanks for reading! Sincerely

Mary Conrad
9817 LIV 239
Chillicothe, MO. 64601

Sent from my iPhone

Wray, Gorden

From: DNR.CAFO
Sent: Thursday, January 30, 2020 9:34 AM
To: Wray, Gorden
Cc: Peters, Heather
Subject: FW: CAFO Hearing

From: Nancy Shy <nancylockeshy@gmail.com>
Sent: Wednesday, January 29, 2020 5:20 PM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: CAFO Hearing

Re: CAFO Application #34322 by Z8Sow Farm
I oppose granting this CAFO a permit.
I request a hearing by MDNR before granting a permit.

A hearing is requested for the following reasons:

The CAFO will be built just outside the Thompson River floodplain which is full of sink holes, fresh water ponds, and intermittent streams.

Due to the bottleneck and levy structure in this section of the river, the area is very prone to flooding and high saturation for long periods of time.

Flooding and erosion cause concern, not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields.

Conditions in CAFOs breed antibiotic resistant bacteria and diseases that can be spread to the surrounding community.

Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area just 3.5 miles to the west.

I look forward to a hearing.
Nancy Shy
660.646.6723
1205 Sunset
Chillicothe MO 64601

Additional effects of this CAFO in this area are as follows:

The Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and an annual tour of Poosey.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to seven miles surrounding the operation.

County roads will face significant wear from heavy truckloads hauling hogs and feed.

If United Hog Systems is looking to expand to Livingston County, this could be just the first of several large hog operations proposed for the area.

February 28, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 12 2020
Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just ~~North~~ ^{North} of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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We are requesting a public hearing for review of this matter.

Sincerely,

Norman Ropp

RECEIVED

FEB 19 2020

January 31, 2020

Water Protection Program

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

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We are requesting a public hearing for review of this matter.

Sincerely,



Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 13 2020
Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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We are requesting a public hearing for review of this matter.

Rebeka Gilliam

Sincerely,

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED

MAR 06 2020

Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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We are requesting a public hearing for review of this matter.

Sincerely,

Ronald Moore
6717 Liv. 245
Chillicothe Mo.
64601

RECEIVED

FEB 13 2020

Water Protection Program

January 31, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

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We are requesting a public hearing for review of this matter.

Sincerely,



Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

To whom it may concern:

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We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,

Rylee Beeter

RECEIVED
MAR 10 2020
Water Protection Program

Wray, Gorden

From: DNR.CAFO
Sent: Wednesday, March 4, 2020 9:03 AM
To: Wray, Gorden
Subject: FW: Application #G510606Z8

Follow Up Flag: Follow up
Flag Status: Flagged

From: Pam Miller <stephenpammiller@gmail.com>
Sent: Wednesday, March 4, 2020 8:41 AM
To: DNR.CAFO <CAFO@dnr.mo.gov>
Subject: Application #G510606Z8

This is concerning the above application in reference to Farm Site location section 8, township 59N, 24W in Livingston County.

I live in Livingston County where we have had a health ordinance in effect for 20 years. We believe this ordinance was enacted not to suppress agriculture but to protect our citizens. Currently a CAFO is seeking to move into our area. Because of SB391, we are being told that we need to change our health ordinance and allow them in. I grew up on a farm and have always lived in a farming community so not believing in or supporting agriculture is not the issue. I understand that DNR has regulations but does not have the manpower to enforce and truly regulate CAFO's. There are only minimum standards in place and they are not regulated to any degree. CAFO's lower property values, threaten our water supply, and the overall health of our citizens, let alone the obnoxious smell that is associated with them. The CAFO that is attempting to come into our community has had fines from DNR in the past-----but they were able to claim that they couldn't afford the \$12,000 fine and were able to weasel their way down to a \$2000 one! Absolutely ridiculous! How many of us can get out of a fine or consequence for a wrong by saying we can't afford it? These corporations are spending millions of dollars to construct their sites----so being unable to afford it is inexcusable. If CAFO's are what the American people want, they need to be constructed in areas away from humanity AND they need to be heavily regulated so that the health of our citizens is given the utmost respect. Iowa and North Carolina are prime examples of what happens with virtually unregulated CAFO's.

To be a little more forthcoming, this proposed site affects my family directly. My sister and a lot of her family, plus several of my friends, live within a mile, several within a half mile of the proposed site. I grew up not far away in Grundy County and attended a church near there. Per soil survey, the soil is not suitable for this kind of structure. It is also located in a flood plain.

My niece lives within a half mile. She has an auto immune disease and her grandparents also live within a half mile. They are elderly and have several health problems. Poosey Conservation area is also nearby. For many years, citizens have worked diligently to create and maintain trails in this area, so our citizens can enjoy a quiet, peaceful sanctuary not far from home. They hunt, hike, bike, fish, picnic, etc. there. Allowing a CAFO nearby pretty much eliminates that draw to nature.

My family and other nearby neighbors are concerned not only about their health, but about their property values. Who is going to buy their property for its current value? No one will want it, other than a CAFO. They

will lose money on their investment. For my family, this land is also sentimental. Much of the surrounding area has been in my brother in laws family for many years.

This is truly a "if you build it, they will come" situation. If we allow one, more will come. Regulations are lax and not enforced. WHO is protecting our community? Chillicothe has worked hard for many years to be a community that draws people in, residents and businesses alike. We are "the home of sliced bread", we have an awesome Main Street Chillicothe thing going on. We have many industries located in and around us. CAFO's do not "draw people in". I am concerned that this will destroy not only the livelihood of the rural folks near the site, but also the ones in the community of Chillicothe. CAFO's bring expenses, ie. road repair for one, and they do not bring income into a community. In fact, the opposite is often true. People leave!

Please seriously consider two things. Location of CAFO's in populated areas, and especially this particular application, and two, regulation of said CAFO's. Protect the American people and stand up for what is right. Not what some see as "agriculture"!

Pamela L. Miller
Stephen D. Miller

2-20-20

Missouri Department of Natural Resources

P.O. Box 1770

Jefferson City, MO 64575

RECEIVED
FEB 24 2020
Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local roadways.

I suffer from COPD and wear oxygen continuously. Upon investigation of the impacts of similar operations on communities, I discovered concerning information about the affect of CAFOs. Duke University has conducted studies proving that individuals who live in close proximity to CAFOs have shorter life expectancies due to anemia, kidney disease and tuberculosis, are subject to increased infant mortality rates, have increased incidences of septic infections, and increased respiratory disease. A CAFO in such close proximity to my home is very concerning to me.

The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

We own livestock, and are concerned about potential ill effects they may suffer as a result of being in close proximity to the CAFO, in part due to the increased fly population that is inevitable when that number of livestock is in one location.

My husband and I built our home here many years ago. The thought that my family's health and safety is at risk due to this proposed CAFO is unacceptable. What can we do to contest authority for the CAFO to be authorized/licensed? What can the DNR do to either regulate CAFOs in general and this CAFO in particular? Is there anything else we can do to prevent this impending disaster? We will be doing everything in our power to prevent this.

Sincerely,



Steve and Mary Kae Saale

GS10606

RE: CAFO Application #~~2022~~ by Z8Sow Farm

Site location Section 8, Township 59N, Range 24 W in Livingston County

We/I oppose granting this CAFO a permit.

We /I request a hearing by MDNR before granting a permit.

A hearing is requested for the following reasons:

- The CAFO will be built just outside the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams.
- Due to the bottleneck and levee structure in this section of the river, the area is very prone to flooding and high saturation for long periods of time.
- Flooding and erosion case concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields.
- Conditions in CAFOS breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community.
- Air emissions and water contamination threaten the health and future of established organic famrs in the area, as well as Poosey Conservation Area, just 3.5 miles to the west.

I look forward to a hearing.

Name Sylvia E Kille

phone # 660-707-0506

address or email 8786 LIV 514
CHILICOTHE MO 64601

Additional effects of this a CAFO in this area are as follows:

- The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, comping, recreation and an annual Tour of Poosey.
- Property values have been shown to decrease by up to 88% for properties adjacent to CAFOS, and can even be impacted for up to 7 miles surroundiibg the operation.
- County roads will face significant wear from heavy truckloads hauling hogs and feed.
- If United Hog Systems is looking to expand to Livingston County, this could be just the first of serveral large hog operatons proposed for the area.

RECEIVED
MAR 03 2020
Water Protection Program

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 16 2020
Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

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We are requesting a public hearing for review of this matter.

Sincerely,



Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 03 2020
Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

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Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,

Vicky Handing

1020 Liv 507

Jamesport Mo 64648

We back up to
Poosey Cons. area

February 28, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RECEIVED
MAR 12 2020
Water Protection Program

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

We are requesting a public hearing for review of this matter.

Sincerely,



RECEIVED

FEB 10 2020

Water Protection Program

January 31, 2020

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Sir or Madam:

We are writing in regards to the proposed placement of a confined hog operations (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County. We own a property just south of this location. We are opposed to the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock, and the long-reaching impact to the local infrastructure, including our roadways.

This is located just outside of the Thompson River Floodplain, which is full of sinkholes, freshwater ponds, and intermittent streams. Due to the bottleneck and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. Flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. The property in question is also located in the 100 year flood plain. I realize that United Hog Systems is "compliant" with standards set forth by you, the DNR. However, research shows that those systems have continuously failed in other operations around the country, resulting in pollution of the water supply. The land in question sits within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Conditions in the CAFO's breed antibiotic-resistant bacteria and disease that can be spread to the surrounding community. Air emissions and water contamination threaten the health and future of established organic farms in the area, as well as Poosey Conservation Area, just 3.5 miles to the southwest. The Poosey Conservation area brings in thousands of visitors throughout the year for fishing, hiking, camping, recreation, and tours. Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs, and can even be impacted for up to 7 miles surround the operation. County roads will face significant wear from heavy truckloads hauling hogs and feed. If United Hog Systems is looking to expand into Livingston County, this could be the first of many large hog operation proposals for the area.

We are requesting a public hearing for review of this matter.

Sincerely,

Wagne & Betty Lippin

want a hearing!

Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

RECEIVED

MAR 03 2020

Water Protection Program

To whom it may concern:

We are writing regarding the proposed placement of a confined hog operation (CAFO) by United Hog Farms in Section 8, Township 59N, Range 24W in Livingston County.

We oppose the placement of this operation for many reasons, including the impact on our personal health, our local natural resources, the health of our livestock and the far-reaching impact to the local infrastructure.

The proposed site is located just outside the Thompson River Floodplain. There are numerous sinkholes, ponds, and freshwater springs and streams in the area. Due to the meandering Thompson River and levee structures in this section of the river, the area is prone to flooding with high saturation for long periods of time. The high potential for flooding and erosion cause concern not just for the structural integrity of the CAFO's underground manure storage pits, but also for the thousands of gallons of hog waste applied to nearby farm fields. Also, the land in question sets within the Northwest Missouri groundwater province, which is estimated to contain 2.2% of Missouri's potable ground water, which is 10.2 trillion gallons. Leaching of contaminants into the groundwater is of great concern.

Many studies show conditions in CAFOs breed antibiotic resistant bacteria and disease that can be spread to the surrounding community. Air emissions of ammonia, methane and hydrogen sulfide and well water and stream contamination threaten the health and future of the established organic farms in the area. The CAFO also poses a threat to Poosey Conservation Area, just 3 miles to the southwest. Poosey Conservation Area brings in thousands of visitors throughout the year for fishing, hunting, hiking, camping, biking, horseback riding, tours and other recreation.

Property values have been shown to decrease by up to 88% for properties adjacent to CAFOs and can be impacted for up to seven miles around the operation. County roads and the lettered, asphalt highways A, W, and Y will face significant wear from heavy truckloads hauling hogs, feed, manure, supplies and concrete. This could be the first of many CAFO proposals for the area. We strongly believe our area cannot accommodate the strain that this CAFO would put on our infrastructure, fresh water, air and way of life.

We are requesting a public hearing for review of this matter.

Sincerely,

Wilma A. Moore
6717 LIV 245
Chillicothe, Mo. 64601