

Emerald Sky Dairy Manure Spill Report**December 23, 2019 2019**

Inspection date: November 21, 2019

Operation Name: Emerald Sky Dairy

On-Site Representative: Brian Mooney—NMP/Compliance

DNR Staff: Jeff Jackson and Joe Cunningham DNR Agriculture Runoff Program

Tony Evers, Governor
Preston D. Cole Secretary

Customer Service # 888-936-7463

**Summary of Investigation:**

On November 21, 2019 at approximately 7:30AM Jeff Jackson – DNR CAFO Specialist was notified by DNR Warden Isaac Kruse of a manure runoff event in progress at a location off CTH G in St. Croix County, east of Emerald Sky Dairy (ESD) (Map 1). Kruse indicated the manure spill was first reported to him via voicemail message left by the Deforest State Patrol at 11:04PM on November 20, 2019. Kruse was off duty and did not receive the message until the morning of November 21, 2019. The anonymous person reported manure was flowing down the CTH G road ditch.

At approximately 7:45AM Jackson contacted Brian Mooney - Emerald Sky Dairy NMP/Compliance Manager to notify him of the situation, and to obtain information of their recent manure application activities in the area. ESD applied manure to field ERICS-3 on November 20, 2019, completing the application later that afternoon. Jackson had conducted a manure hauling audit with ESD on field ERICS-3 the previous day (See Appendix 1).

National Oceanic & Atmospheric Administration (NOAA) data for Baldwin Wisconsin indicated precipitation totals of approximately 0.02" on November 20, 2019 and approximately 0.36" on November 21, 2019 (see Appendix 2). Precipitation totals were less than a 25 year—24 hour storm event for St. Croix County.

At approximately 8:45AM Jackson met Kruse and Warden Paul Sickman at CTH G near the Hutton Creek bridge crossing to discuss the present situation. Kruse and Sickman noted manure laden water flowing down a grass waterway and entered the CTH G road ditch. This manure water then traveled east approximately 250 meters down the road ditch and entered an intermittent section of Hutton Creek (photo 1-2). It was believed manure was coming from field ERICS-3 and flowing down the affected grass waterway. Field ERICS-3 is directly south of a homestead at 2553 CTH G Emerald, WI (Map 2).

At approximately 9:10AM, an ESD employee met with DNR staff to discuss cleanup actions. DNR staff requested an earthen berm be constructed near the head of the effected waterway near field ERICS-3's eastern border (photo 3). The purpose of this berm was to prevent additional manure laden water from leaving the field boundary. Two straw bales were placed within the CTH G road ditch to berm additional manure laden water (photo 4). The dairy contacted a septic hauler to begin removing manure water from the CTH G road ditch (photo 5). ESD conducted tillage passes on fields ERICS-3 and ERICS-4 to work manure and stormwater into the soil (photo 6). All these actions were important steps in reducing runoff flow to the grass waterway, road ditch, and Hutton Creek.

While ESD staff worked on their clean-up activities, Jackson continued the in-stream investigation, and took water samples from the CTH G road ditch and Hutton Creek (Samples EM-0, EM-1, and EM-2). Manure laden water entering Hutton Creek was brown, turbid, and smelled of manure (photo 8). There was also an abundance of white foam developing at the confluence of the road ditch channel and Hutton Creek (photo 7). This section of Hutton Creek upstream of CTH G is a wide and shallow run, mostly covered with ice. Observations of Hutton Creek above

the confluence with the road ditch channel had low stream flow and was mostly covered with ice. The low stream flow allowed contaminated water to back-up, moving upstream approximately 30-40 meters. Water in Hutton Creek below the CTH G bridge had good flow due to additional inputs from the road ditch. Higher flows caused much of the manure water to flow over the top of existing ice sheets.

After further investigation of Hutton Creek downstream of CTH G, dead forage minnow species were observed within a shallow riffle approximately 10 meters downstream of CTH G bridge crossing. Approximately 24 dead minnows were discovered in this area. Minnow species included central mud minnow, fathead minnow, creek chub, and brook stickleback (photo 9-10).

Upon the discovery of dead minnows, Jackson notified DNR Fisheries staff who then began a fish kill investigation at several bridge crossings downstream of CTH G. These bridge crosses included: 160th Avenue, 250th Street, 170th Avenue, and CTH O. Department staff stream monitoring efforts continued until Tuesday, November 26, 2019. No additional dead fish or noticeable stream impairments were discovered during the investigation (photo 11-14)

Water Sample Results:

Four sets of water samples were taken during the investigation. Split water samples for EM-0, EM-1 and EM-2 were provided to ESD, along with a copy of DNR water sample data sheets which list parameters to be tested. Water samples EM-3 were taken later in the day after split samples were provided to ESD. Sample EM-3 was taken as a baseline sample in case further areas of the stream were affected. Department water samples were shipped to Wisconsin State Lab of Hygiene for analysis.

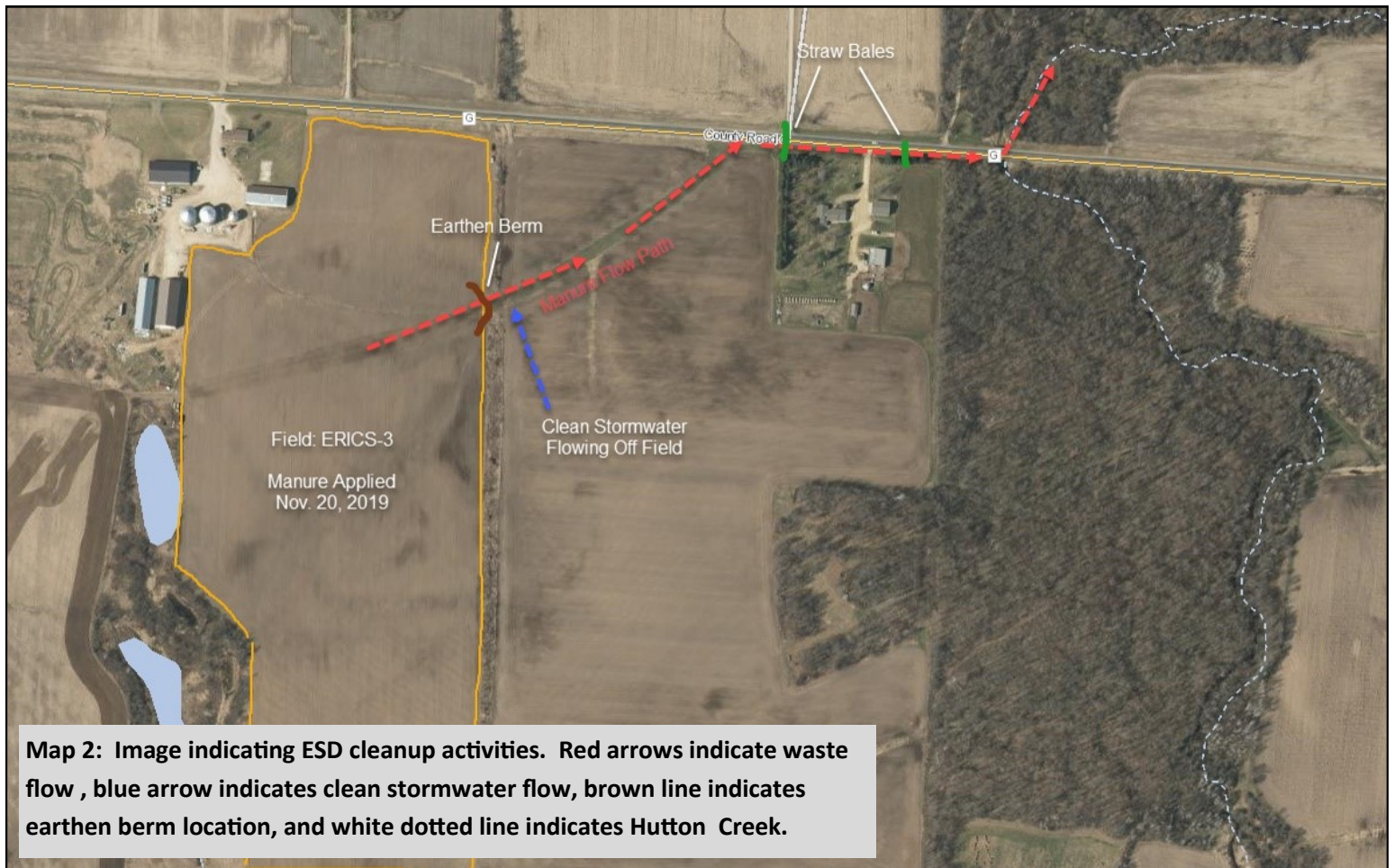
- EM-0: sample taken on Hutton Creek approximately 60 meters upstream of CTH G bridge crossing. Water in this area appeared clear, with little stream flow. This sample served as a baseline water sample of the stream (photo 15)
- EM-1: sample taken from the CTH G road ditch flow channel approximately one meter upstream of the channel's confluence with Hutton Creek. Water was brown and smelled of manure (photo 16)
- EM-2: sample taken on Hutton Creek approximately 12 meters downstream of CTH G bridge crossing (photo 17)
- EM-3: sample taken on Hutton Creek approximately five meters upstream of the 170th Avenue bridge. Hutton Creek was clear, with good stream flow.

There are a significant difference in water clarity between EM-0, EM1, and EM-2 (photo 18). Water sample results at EM-1 and EM-2 exhibited high levels of bacteria, indicating the presence of waste. Nutrient analysis results for EM-0, EM-1, and EM-2 indicate levels which exceed surface water quality standards (see Appendix 3 for complete water sample results). It is possible waste had backed up to water sample location EM-0. While the water at this location appeared clear, results indicated higher than expected levels of bacteria and nutrients present.

SITE MAPS:



Map 1: Emerald Sky Dairy site and manure spill location.



Map 2: Image indicating ESD cleanup activities. Red arrows indicate waste flow , blue arrow indicates clean stormwater flow, brown line indicates earthen berm location, and white dotted line indicates Hutton Creek.

SITE OBSERVATIONS:

Photo 1: Manure laden water flowing down CTH G road ditch.



Photo 2: Hutton Creek downstream of CTH G. Water of was brown, foamy, and smelled of manure.



SITE OBSERVATIONS:



SITE OBSERVATIONS:



Photo 5: Vacuum truck contracted to remove waste from the CTH G road ditch. Picture taken facing east.



Photo 6: Preventive tillage of ERICS-4 and portions of the affected grass waterway. Picture taken facing south. Red arrow indicates runoff flow direction.

SITE OBSERVATIONS:

SITE OBSERVATIONS:

Photo 9: Dead forage minnows recovered from Hutton Creek downstream of the CTH G bridge.



Photo 10: Additional dead forage minnows found in Hutton Creek downstream of the CTH G bridge.

Photo 11: Hutton Creek at CTH O on November 21, 2019

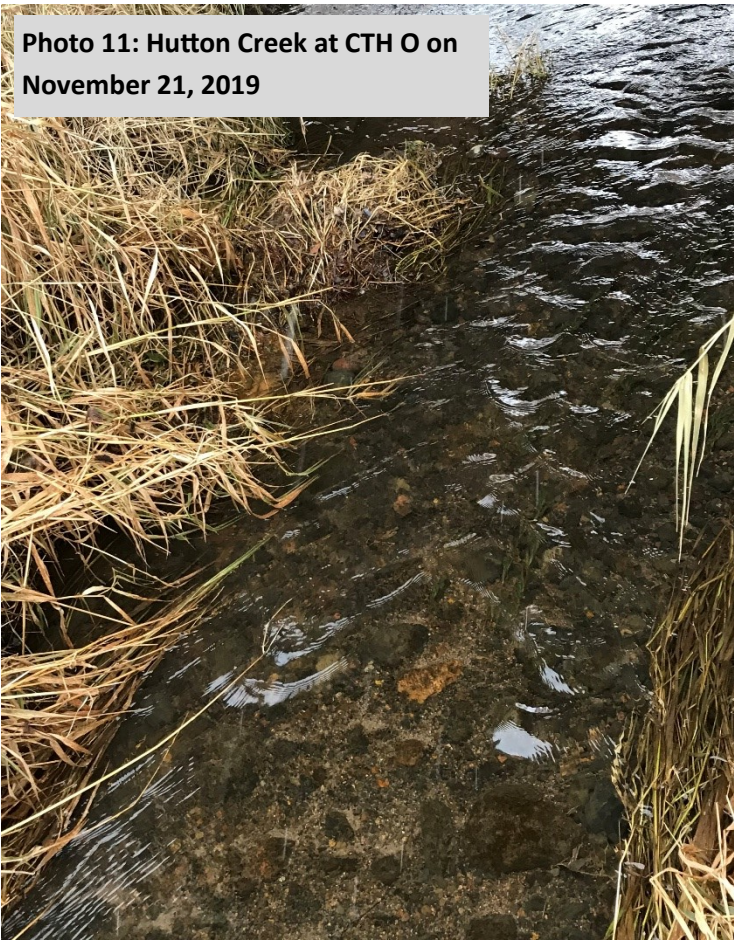


Photo 12: Hutton Creek at 250th Street on November 21, 2019



Photo 13: Hutton Creek upstream of CTH G on November 25, 2019.



Photo 14: Hutton Creek downstream of CTH G on November 25, 2019.

Photo 15: Water sample EM-0



Photo 16: Water sample EM-1



Photo 17: Water sample EM-2



Photo 18: Visual comparison between EM-0, EM-1, and EM-2.



Appendix 1

November 20, 2019 Manure Hauling Audit

Manure Hauling Audit Report

December 8, 2019

Inspection date: November 20, 2019

Operation Name: Emerald Sky Dairy (ESD)

Operation Representative: Brian Mooney—Emerald Sky Dairy
NMP/Compliance Manager

DNR Staff: Jeff Jackson DNR Agriculture Runoff Program

Tony Evers, Governor
Preston D. Cole Secretary
Customer Service # 888-936-7463



Subject: Manure Hauling Audit Report

On November 20, 2019 at approximately 12:30PM, Jeff Jackson with Wisconsin Department of Natural Resources conducted a manure hauling audit of field **Eric-3**. The Department documented the following items during the audit:

- Liquid manure was being spread at a rate of approximately 11,000—13,000 gallons per acre
- Some manure appeared to be migrating down gradient after been applied
- Soil was damp and somewhat stiff but did not appear frozen
- No noticeable soil erosion was observed within the field boundary
- The previous crop was corn for grain; field edges were harvested for corn silage
- Mooney reviewed the Dairy's manure application protocols with the manure hauler.
- The area was forecasted for precipitation within the next 24 hours

Additional Information

Due to manure movement in the field after application, Jackson requested the dairy reduce application rates and conduct additional tillage along the field boundary and low-lying area . The dairy agreed to the request and immediately reduced application rates; Jackson left the site shortly after.

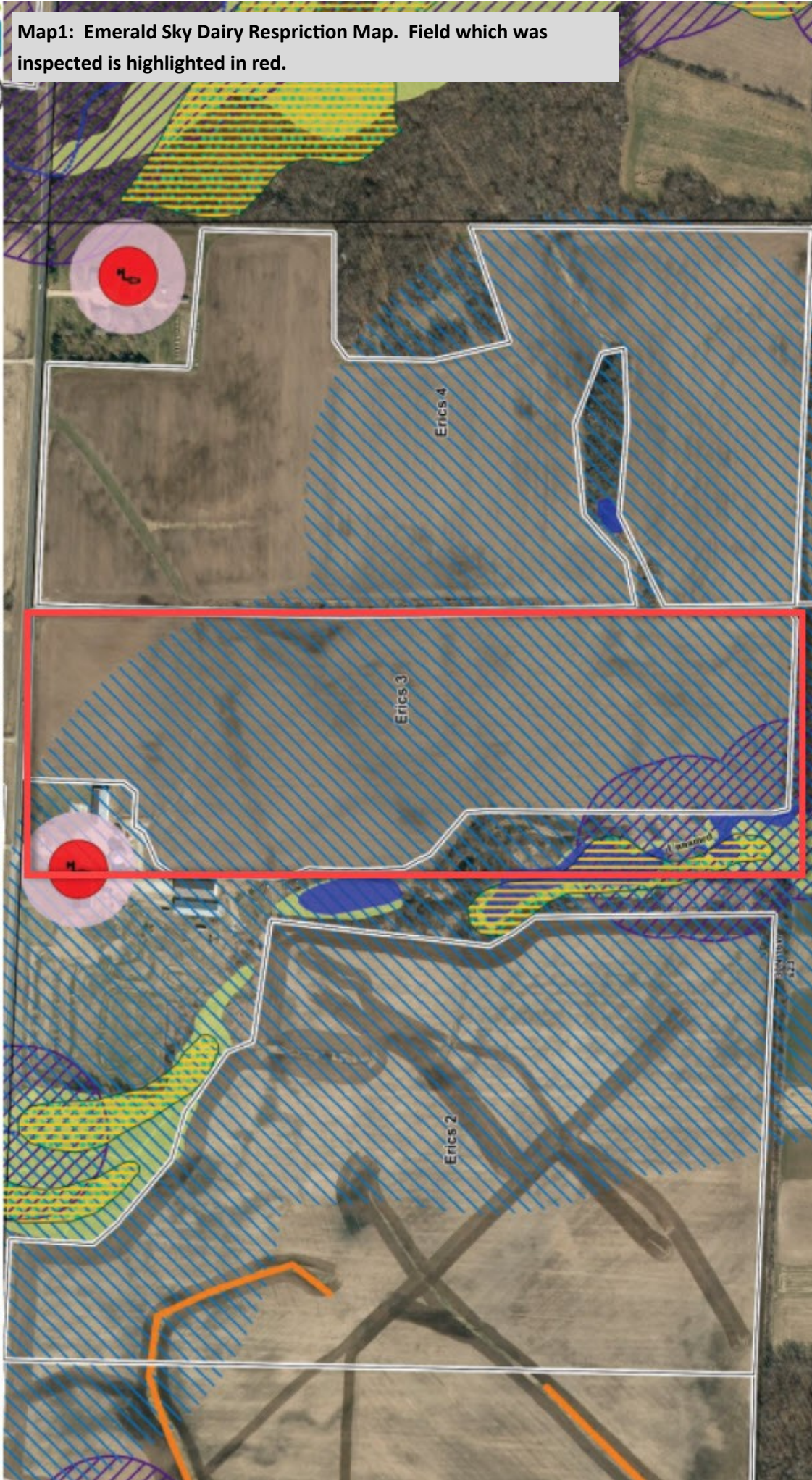
At approximately 2:00PM Mooney sent Jackson pictures of the additional tillage near the field's eastern border and low-lying area. The dairy stated they planned to continue monitoring the field to assure manure did not leave the field boundary.

Currently this field does not have any permanent waterways, although the field does have a history of having several. The Dairy should monitor the field to determine if permanent waterways are necessary. The most recent SnapPlus Field Data and 590 Assessment Plan submitted to the Department indicates ERICS-3 current field management meets tolerable soil lose requirements.

Eric's 03_04

Farm: Emerald Sky Dairy, V18 Generated: 9/2/2019, Crop year: 2019, Township Range Section: 30N 16W s23

Map1: Emerald Sky Dairy Respriction Map. Field which was inspected is highlighted in red.



- | | | | |
|---|--|--|--|
| <ul style="list-style-type: none"> DNR Wetland Local Prohibitions CAFO SWQMA 300FT SWQMA 1000FT CAFO Manure Restriction (W) CAFO Manure Restriction (R) Bedrock depth <5ft CAFO 200ft Downslope Buffer Perennial Streams Intermittent Streams Waterbodies | <ul style="list-style-type: none"> Countries Township/Range Impaired Waters (303d) Outstanding/Exceptional Waters P - High Permeability R - Bedrock <20" W - Wet <12" to Waterable Areas contributing runoff to direct conduits to groundwater Manure prohibited Incorporate manure Nutrient prohibited areas (buffers vary by feature) | <ul style="list-style-type: none"> Nutrient prohibited areas (drawn manure prohibited areas) Grassed waterway Non-eroding channel Ephemeral erosion channel Ditch Gully Headland stacks Not farmed Grass filter area Vegetated buffer Non-metallic mine | <ul style="list-style-type: none"> Water Sinkhole/other karst feature Other Soil samples County Defined Karst Features Fields Drinking Well Public well Irrigation well Sinkhole Non-metallic mine |
|---|--|--|--|

SITE OBSERVATIONS:



Photo 1: Area of field: ERICS-3 which just had manure applied to it. Should manure appeared to be migrating down slope.



Photo 2: Area of field: ERICS-3 which just had manure applied to it. Photo taken facing south.

Inspection purpose: Complaint Audit (Announced) Audit (Unannounced) Spill / Runoff
 Other: _____

Inspection Date: 11/20/2019	Application Date: 11/20/2019	Permittee Name: Emerald Sky Dairy
Field Location: CTH G	Field ID: ERICS-3	Applicator Name:
Application Rate: 11,000-13,000 GPA	Previous/current crop: Corn for Grain	DNR Inspector Name(s): Jeff Jackson
Weather conditions: Dry		Soil conditions: Damp/Wet
Application Method(s): <input type="checkbox"/> Surface <input checked="" type="checkbox"/> Incorporated <input type="checkbox"/> Injected <input type="checkbox"/> Other: _____		
Equipment Used: <input type="radio"/> Tractor/Tanker <input type="radio"/> Semi Truck <input checked="" type="radio"/> Tractor/Hose <input type="radio"/> Other: _____		

Any manure runoff (left field boundaries)? Yes No
 If yes, check resource(s) impacted Surface Waters Wetlands Potential Groundwater None
Notes:
 Soil was damp and somewhat stiff but didn't appear frozen.
 Manure applicator said the tillage equipment was able to trench at a depth of 6-10" with the occasional 3".

Manure Setbacks and Restrictions (during non-frozen or snow covered conditions)	Requirement Met?		
100 feet from private wells (1000 feet to municipal wells when applicable)	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
100 feet from other groundwater conduits	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
25 feet from wetlands	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
25 feet to surface waters/conduits to surface waters (incorporated or injected)	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
100 feet setback to surface waters/conduits to surface waters (surface applied)	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
No manure spread in grassed waterways (non-conduits to surface waters)	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
No excessive ponding or runoff within field boundaries	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> N/A
Depth to groundwater greater than 24 inches (if checked, need to dig hole)	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Verified
Depth to bedrock greater than 24 inches (if checked, need to dig hole)	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Verified
All observed restrictive features labeled on existing restriction map	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Not Verified

Note: "NA" means the requirement does not apply due to absence of setback feature, method, etc.

Notes:
 A central flow channel could possibly be added to the restriction map. DNR Surface Water Data Viewer and SnapMaps do not show a surface water feature. Past aerial imagery showed several grassed waterways through the field carrying water from west to east.

Tile features observed (inlets/outlets/breathers)? Yes No

Outlets found? Yes No

Are tile features on restriction maps? Yes No

Setbacks to tile features met? (25 feet for incorp/inject; 100 feet for surface) Yes No

Outlet observations: Flowing Not flowing Manure present No manure present

Notes:

Appendix 2

NOAA Precipitation Totals for
November 20 & November 21, 2019

Record of Climatological Observations

These data are quality controlled and may not be identical to the original observations.

Generated on 12/20/2019

Observation Time Temperature: 0730 Observation Time Precipitation: 0730

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag				Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2019	11	01																	
2019	11	02																	
2019	11	03																	
2019	11	04																	
2019	11	05																	
2019	11	06																	
2019	11	07																	
2019	11	08																	
2019	11	09																	
2019	11	10																	
2019	11	11																	
2019	11	12																	
2019	11	13																	
2019	11	14																	
2019	11	15																	
2019	11	16																	
2019	11	17																	
2019	11	18																	
2019	11	19																	
2019	11	20	36	30	34	0.02		0.0		0.0									
2019	11	21	42	32	32	0.36		0.0		0.0									
2019	11	22																	
2019	11	23																	
2019	11	24																	
2019	11	25																	
2019	11	26																	
2019	11	27																	
2019	11	28																	
2019	11	29																	
2019	11	30																	
Summary			39	31		0.38		0.0											

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

Appendix 3

Water Sample Results

**Wisconsin Department of Natural Resources
Laboratory Report**

12/23/2019

Lab: 113133790

Sample: 482913001

Page 1 of 8

Laboratory: Wisconsin State Laboratory of Hygiene
 PO Box 7996
 Madison WI 53718
 Phone : 608-224-6203 Fax Phone : 608-224-6213

DNR ID 113133790

Sample:

Field #: **EM-0** Sample #: **482913001**
 Collection Start: **11/21/2019 09:10 am** Collection End: **11/21/2019 09:10 am**
 Collected by: **JEFF JACKSON** Waterbody/Outfall Id: **2610900**
 ID #: ID Point #:
 County: **St. Croix** Account #: **WW019**
 Sample Location: **HUTTON CREEK APPROXIMATELY 60 METERS US CTH G**
 Sample Description: **SURFACE WATER GRAB SAMPLE**
 Sample Source: **Surface Water** Sample Depth: **2IN**
 Date Reported: **12/13/2019** Sample Status: **CORRECTED**
 Project No: Sample Reason:
 Comment: Analyzed past the 8 hours holding time: Method SM9223BMPN analyzed on 11/22/19 0951

Analyses and Results:

Analysis Method		Analysis Date	Lab Comment			
ASTM D1252-06B		11/26/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
340	COD HI LEVEL	38.8	MG/L	16.1		53.7

Analysis Method		Analysis Date	Lab Comment			
SM9223BMPN		11/23/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
99188	E COLI COLILERT QUANTITRAY MPN	214	/100 ML			1

Analysis Method		Analysis Date	Lab Comment			
EPA 365.1		11/26/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
665	PHOSPHORUS TOTAL	0.339	MG/L	0.00800		0.0270

Analysis Method		Analysis Date	Lab Comment			
EPA 353.2		12/10/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
631	NITROGEN NO3+NO2 DISS (AS N)	0.252	MG/L	0.0360		0.120

Analysis Method		Analysis Date	Lab Comment			
EPA 351.2		11/27/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
625	NITROGEN KJELDAHL TOTAL	1.22	MG/L	0.260		0.860

**Wisconsin Department of Natural Resources
Laboratory Report**

12/23/2019

Lab: 113133790

Sample: 482913001

Page 2 of 8

<i>Code</i>	<i>Description</i>	<i>Result</i>	<i>Units</i>	<i>LOD</i>	<i>Report Limit</i>	<i>LOQ</i>
-------------	--------------------	---------------	--------------	------------	---------------------	------------

<i>Analysis Method</i>		<i>Analysis Date</i>		<i>Lab Comment</i>		
Field Data						
<i>Code</i>	<i>Description</i>	<i>Result</i>	<i>Units</i>	<i>LOD</i>	<i>Report Limit</i>	<i>LOQ</i>
32	CLOUD COVER	100	%			
94	CONDUCTIVITY FIELD	256	UMHOS/CM			
300	DISSOLVED OXYGEN FIELD	6.9	MG/L			
301	OXYGEN, DISSOLVED, PERCENT OF SATURATION %	47.1	%			
400	PH FIELD	7.4	SU			
10	TEMPERATURE FIELD	-0.2	C			

<i>Analysis Method</i>		<i>Analysis Date</i>		<i>Lab Comment</i>		
EPA 350.1		12/10/2019				
<i>Code</i>	<i>Description</i>	<i>Result</i>	<i>Units</i>	<i>LOD</i>	<i>Report Limit</i>	<i>LOQ</i>
608	NITROGEN NH3-N DISS	0.236	MG/L	0.0150		0.0480

**Wisconsin Department of Natural Resources
Laboratory Report**

12/23/2019

Lab: 113133790

Sample: 482913002

Page 3 of 8

Laboratory: Wisconsin State Laboratory of Hygiene
 PO Box 7996
 Madison WI 53718
 Phone : 608-224-6203 Fax Phone : 608-224-6213

DNR ID 113133790

Sample:

Field #:	EM-1	Sample #:	482913002
Collection Start:	11/21/2019 09:13 am	Collection End:	11/21/2019 09:13 am
Collected by:	JEFF JACKSON	Waterbody/Outfall Id:	2610900
ID #:		ID Point #:	
County:	St. Croix	Account #:	WW019
Sample Location:	ROAD DITCH CHANNEL APPROXIMATELY 4 METERS ABOVE CONFLUENCE WITH		
Sample Description:	HUTTON CREEK		
Sample Source:	SURFACE WATER GRAB SAMPLE		
Date Reported:	Surface Water	Sample Depth:	2IN
Project No:	12/13/2019	Sample Status:	CORRECTED
Comment:	Sample Reason:		
	Analyzed past the 8 hours holding time: Method SM9223BMPN analyzed on 11/22/19 0951		

Analyses and Results:

Analysis Method		Analysis Date	Lab Comment			
ASTM D1252-06B		11/26/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
340	COD HI LEVEL	2500	MG/L	80.5		268.5

Analysis Method		Analysis Date	Lab Comment			
SM9223BMPN		11/23/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
99188	E COLI COLILERT QUANTITRAY MPN	27230	/100 ML			100

Analysis Method		Analysis Date	Lab Comment			
EPA 365.1		12/06/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
665	PHOSPHORUS TOTAL	14.8	MG/L	0.160		0.540

Analysis Method		Analysis Date	Lab Comment			
EPA 350.1		12/10/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
608	NITROGEN NH3-N DISS	107	MG/L	3.00		9.60

Analysis Method		Analysis Date	Lab Comment			
EPA 353.2		12/10/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
631	NITROGEN NO3+NO2 DISS (AS	16.6	MG/L	1.80		6.00

**Wisconsin Department of Natural Resources
Laboratory Report**

12/23/2019

Lab: 113133790

Sample: 482913002

Page 4 of 8

<i>Code</i>	<i>Description</i>	<i>Result</i>	<i>Units</i>	<i>LOD</i>	<i>Report Limit</i>	<i>LOQ</i>
	N)					

<i>Analysis Method</i>	<i>Analysis Date</i>	<i>Lab Comment</i>
EPA 351.2	11/27/2019	

<i>Code</i>	<i>Description</i>	<i>Result</i>	<i>Units</i>	<i>LOD</i>	<i>Report Limit</i>	<i>LOQ</i>
625	NITROGEN KJELDAHL TOTAL	154	MG/L	5.20		17.2

<i>Analysis Method</i>	<i>Analysis Date</i>	<i>Lab Comment</i>
Field Data		

<i>Code</i>	<i>Description</i>	<i>Result</i>	<i>Units</i>	<i>LOD</i>	<i>Report Limit</i>	<i>LOQ</i>
32	CLOUD COVER	100	%			
94	CONDUCTIVITY FIELD	2157	UMHOS/CM			
300	DISSOLVED OXYGEN FIELD	12.3	MG/L			
301	OXYGEN, DISSOLVED, PERCENT OF SATURATION %	85.6	%			
400	PH FIELD	7.8	SU			
10	TEMPERATURE FIELD	0.4	C			

**Wisconsin Department of Natural Resources
Laboratory Report**

12/23/2019

Lab: 113133790

Sample: 482913003

Page 5 of 8

Laboratory: Wisconsin State Laboratory of Hygiene
PO Box 7996
Madison WI 53718
Phone : 608-224-6203 Fax Phone : 608-224-6213

DNR ID 113133790

Sample:

Field #:	EM-2	Sample #:	482913003
Collection Start:	11/21/2019 09:20 am	Collection End:	11/21/2019 09:20 am
Collected by:	JEFF JACKSON	Waterbody/Outfall Id:	2610900
ID #:		ID Point #:	
County:	St. Croix	Account #:	WW019
Sample Location:	HUTTON CREEK APPROXIMATELY 12 METERS DS CTH G		
Sample Description:	SURFACE WATER GRAB SAMPLE		
Sample Source:	Surface Water	Sample Depth:	2IN
Date Reported:	12/13/2019	Sample Status:	CORRECTED
Project No:		Sample Reason:	
Comment:	Analyzed past the 8 hours holding time: Method SM9223BMPN analyzed on 11/22/19 0951		

Analyses and Results:

Analysis Method		Analysis Date	Lab Comment			
ASTM D1252-06B		11/26/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
340	COD HI LEVEL	2730	MG/L	80.5		268.5

Analysis Method		Analysis Date	Lab Comment			
EPA 351.2		11/27/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
625	NITROGEN KJELDAHL TOTAL	173	MG/L	5.20		17.2

Analysis Method		Analysis Date	Lab Comment			
EPA 353.2		12/10/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
631	NITROGEN NO3+NO2 DISS (AS N)	15.6	MG/L	3.60		12.0

Analysis Method		Analysis Date	Lab Comment			
SM9223BMPN		11/23/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
99188	E COLI COLILERT QUANTITRAY MPN	48840	/100 ML			100

Analysis Method		Analysis Date	Lab Comment			
EPA 365.1		12/06/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
665	PHOSPHORUS TOTAL	15.2	MG/L	0.200		0.675

**Wisconsin Department of Natural Resources
Laboratory Report**

12/23/2019

Lab: 113133790

Sample: 482913003

Page 6 of 8

<i>Code</i>	<i>Description</i>	<i>Result</i>	<i>Units</i>	<i>LOD</i>	<i>Report Limit</i>	<i>LOQ</i>
-------------	--------------------	---------------	--------------	------------	---------------------	------------

<i>Analysis Method</i>	<i>Analysis Date</i>	<i>Lab Comment</i>				
Field Data						
<i>Code</i>	<i>Description</i>	<i>Result</i>	<i>Units</i>	<i>LOD</i>	<i>Report Limit</i>	<i>LOQ</i>
32	CLOUD COVER	100	%			
94	CONDUCTIVITY FIELD	1953	UMHOS/CM			
300	DISSOLVED OXYGEN FIELD	12.1	MG/L			
301	OXYGEN, DISSOLVED, PERCENT OF SATURATION %	83.8	%			
400	PH FIELD	7.8	SU			
10	TEMPERATURE FIELD	0.1	C			

<i>Analysis Method</i>	<i>Analysis Date</i>	<i>Lab Comment</i>				
EPA 350.1	12/10/2019					
<i>Code</i>	<i>Description</i>	<i>Result</i>	<i>Units</i>	<i>LOD</i>	<i>Report Limit</i>	<i>LOQ</i>
608	NITROGEN NH3-N DISS	116	MG/L	3.00		9.60

**Wisconsin Department of Natural Resources
Laboratory Report**

12/23/2019

Lab: 113133790

Sample: 482916001

Page 7 of 8

Laboratory: Wisconsin State Laboratory of Hygiene
PO Box 7996
Madison WI 53718
Phone : 608-224-6203 Fax Phone : 608-224-6213

DNR ID 113133790

Sample:

Field #: EM-3	Sample #: 482916001
Collection Start: 11/21/2019 03:34 pm	Collection End: 11/21/2019 03:34 pm
Collected by: JEFF JACKSON	Waterbody/Outfall Id:
ID #:	ID Point #:
County:	Account #: WW019
Sample Location: HUTTON CREEK @ 170TH AVE- UPSTREAM	
Sample Description: SURFACE WATER GRAB SAMPLE	
Sample Source: Surface Water	Sample Depth: 2IN
Date Reported: 12/13/2019	Sample Status: CORRECTED
Project No:	Sample Reason:
Comment: Analyzed past the 8 hours holding time: Method SM9223BMPN analyzed on 11/22/19 0951	

Analyses and Results:

Analysis Method		Analysis Date	Lab Comment			
EPA 365.1		11/26/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
665	PHOSPHORUS TOTAL	0.0858	MG/L	0.00800		0.0270

Analysis Method		Analysis Date	Lab Comment			
EPA 350.1		12/10/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
608	NITROGEN NH3-N DISS	0.0279	MG/L	0.0150		0.0480

Analysis Method		Analysis Date	Lab Comment			
EPA 351.2		11/27/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
625	NITROGEN KJELDAHL TOTAL	0.378	MG/L	0.260		0.860

Analysis Method		Analysis Date	Lab Comment			
SM9223BMPN		11/23/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
99188	E COLI COLILERT QUANTITRAY MPN	36	/100 ML			1

Analysis Method		Analysis Date	Lab Comment			
EPA 353.2		12/10/2019				
Code	Description	Result	Units	LOD	Report Limit	LOQ
631	NITROGEN NO3+NO2 DISS (AS N)	3.98	MG/L	0.0720		0.240

**Wisconsin Department of Natural Resources
Laboratory Report**

12/23/2019

Lab: 113133790

Sample: 482916001

Page 8 of 8

<i>Code</i>	<i>Description</i>	<i>Result</i>	<i>Units</i>	<i>LOD</i>	<i>Report Limit</i>	<i>LOQ</i>
-------------	--------------------	---------------	--------------	------------	---------------------	------------

<i>Analysis Method</i>		<i>Analysis Date</i>		<i>Lab Comment</i>		
Field Data						
<i>Code</i>	<i>Description</i>	<i>Result</i>	<i>Units</i>	<i>LOD</i>	<i>Report Limit</i>	<i>LOQ</i>
32	CLOUD COVER	70	%			
94	CONDUCTIVITY FIELD	427	UMHOS/CM			
300	DISSOLVED OXYGEN FIELD	11.8	MG/L			
301	OXYGEN, DISSOLVED, PERCENT OF SATURATION %	89.9	%			
400	PH FIELD	7.7	SU			
10	TEMPERATURE FIELD	3.8	C			

<i>Analysis Method</i>		<i>Analysis Date</i>		<i>Lab Comment</i>		
ASTM D1252-06B		11/26/2019				
<i>Code</i>	<i>Description</i>	<i>Result</i>	<i>Units</i>	<i>LOD</i>	<i>Report Limit</i>	<i>LOQ</i>
340	COD HI LEVEL	ND	MG/L	16.1		53.7