Permit Fact Sheet

General Information

Permit Number:	WI-0061697-05-0
Permittee Name:	Calf Source LLC
Address:	N3569 Vanden Bosch Rd
City/State/Zip:	Kaukauna WI 54130
Receiving Water:	Unnamed tributaries of the Branch River within the Branch River Watershed, and groundwaters of the state.

Animal Units					
	Current AU		**Proposed AU** **(Note: If all zeroes, expansions are not expected during permit term)**		
Animal Type	**Mixed**	**Individual**	**Mixed**	**Individual**	**Date of Proposed Expansion**
Dairy Calves (under 400 lbs.)	10981	0	0	0	
Sheep (each)	4448	0	0	0	
Total	2641	0	0	0	

Facility Description

Calf Source LLC is an existing Concentrated Animal Feeding Operation (CAFO) owned by Milk Source LLC and operated by Todd Willer. The farm raises dairy calves and other young livestock. It currently has 2,641 animal unites (10,981 calves and 4,448 goat kids) and has not proposed an expansion during the proposed permit term. The operation has 189 days of storage for liquid manure and process wastewater. Calf Source has a total of 5,644.1 acres (229.1 acres owned and 5,454.3 acres rented) of which 3,795.6 are spreadable acres.

Substantial Compliance Determination

Enforcement During Last Permit:
The most recent comprehensive inspection of the production area occurred on August 6, 2021.

On November 19, 2021 the department issued Calf Source LLC a Notice of Noncompliance for allegedly failing adhere to the permit's schedule requirements. These matters have been addressed, but not fully resolved. Additions to *Section 3 Schedules* of the proposed permit were included to resolve these matters.

This facility has been found to be in substantial compliance with their current permit.

Compliance determination entered by Holly Stegemann 03-21-2024

Sample Point Designation For Animal Waste		
Sample Point Number	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**	
001	Concrete WSF - Sample point 001 is for manure and process wastewater land applied from the concrete waste storage facility (Concrete WSF). The Concrete WSF is a concrete and EPDM lined storage. The facility has a maximum operating level capacity of 447,219 gallons and was upgraded in 2015.	
002	WSF 002 - Sample point 002 is for solid waste storage facility 002 (WSF 002). WSF 002 is the northern concrete storage pad for solid manure that has a capacity of about 9,000 tons and was upgraded in 2015. This storage accepts solid manure from the calf hutches and heifer barns.	
003	WSF 003 - Sample point 003 is for solid waste storage facility 003 (WSF 003). WSF 003 is the southern two-celled concrete storage for solid manure that has a combined capacity of about 23,000 tons and was upgraded in 2015. This storage accepts solid manure from the calf hutches and heifer barns.	
004	West Slurrystore - Sample point 004 is for manure and process wastewater land applied from the West Slurrystore (West Slurrystore). It has a maximum operating level capacity of 1,960,153 gallons and was constructed in 2010. This storage accepts manure and process wastewater from the Concrete WSF and the feed storage area runoff controls.	
005	Feedlot Runoff - Sample point 005 is for visual monitoring and inspection of the calf hutch area and associated runoff control system. Feedlot runoff currently flows into a vegetated treatment area. Proper operation and maintenance is required to ensure unlawful discharges do not occur. Weekly inspections are required and shall be recorded according to monitoring program.	
006	Feed Storage Area - Sample point 006 is for visual monitoring and inspection of the feed storage area. Weekly inspections are required and shall be recorded according to monitoring program. Plans and specifications for a permanent runoff control system shall be submitted according to the Schedules section of the permit.	
008	East Slurrystore - Sample point 008 is for manure and process wastewater land applied from the East Slurrystore (East Slurrystore). It has a maximum operating level capacity of 1,960,153 gallons and was constructed in 2016. This storage accepts manure and process wastewater from Concrete WSF.	
009	Storm Water Runoff - Sample point 009 is for visual monitoring and inspection of all production site storm water conveyance systems. This includes roof gutter and downspout structures, drainage tile systems, grassed waterways and other diversion systems that transport uncontaminated storm water. Proper operation and maintenance is required to keep uncontaminated runoff diverted away from manure and process wastewater handling systems. Weekly inspections are required and shall be recorded according to monitoring program.	

Sample Point Designation For Groundwater Monitoring Systems			
System	**Sample Pt Number**	**Well Name**	**Comments**
Calf Source Production Area	801	MW-1 (801)	
	802	MW-2 (802)	

Sample Point Designation For Groundwater Monitoring Systems			
System	**Sample Pt Number**	**Well Name**	**Comments**
	803	MW-3 (803)	
	804	MW-4 (804)	

1 Livestock Operations - Proposed Operation and Management

Production Area Discharge Limitations

Beginning on the effective date of the permit, the permittee may not discharge pollutants from the operation's production area (e.g., manure storage areas, outdoor animal lots, composting and leachate containment systems, milking center wastewater treatment/containment systems, raw material storage areas) to navigable waters, except in the event a 25-year, 24-hour rainfall event (or greater) causes the discharge from a structure which is properly designed and maintained to contain a 25-year, 24-hour rainfall event for this location as determined under s. NR 243.04. If an allowable discharge occurs from the production area, state water quality standards may not be exceeded.

Runoff Control

The permit requires control of contaminated runoff from all elements of the production area to prevent a discharge of pollutants to navigable waters in accordance with the Production Area Discharge Limitations and to comply with surface water quality standards and groundwater standards. Beginning on the effective date of this permit, (if needed) interim measures shall be implemented to prevent discharges of pollutants to navigable waters. In addition, permanent runoff control system(s) shall be designed, operated and maintained in accordance with the requirements found in USDA Natural Resources Conservation Service standards and ch. NR 243, Wis. Adm. Code. If any upgrading or modifications to runoff controls are necessary, formal engineering plans and specifications must submitted to the Department for approval.

Manure and Process Wastewater Storage

The permit requires the operation to have adequate storage for manure and process wastewater and that storage or containment facilities are designed, operated and maintained to prevent overflows and discharges to waters of the state. In order to prevent overflows, the permittee must maintain levels of materials in liquid storage or containment facilities at or below certain levels including a one foot margin of safety that can never be exceeded. If any upgrading or modifications to the storage facilities are necessary, formal engineering plans and specifications must submitted to the Department for approval.

The permittee currently has approximately 189 days of storage for liquid manure. The permittee must maintain 180 days of storage, unless temporary reductions in required storage are approved by the Department.

Solid Manure Stacking

The operation has proposed to stack solid manure. All stacking of solid manure shall be done in accordance ch. NR 243, Wis. Adm. Code, which includes restrictions from NRCS Standard 313. Stacking of manure is considered to be part of the production area and is subject to the Production Area Discharge Limitations.

Ancillary Service and Storage Areas

The permittee shall take preventative maintenance actions and conduct visual inspections to minimize pollutant discharges from areas of the operation that are not part of the production area or land application areas. These areas are called ancillary service and storage areas and include access roads, shipping and receiving areas, maintenance areas, refuse piles and CAFO outdoor vegetated areas.

Nutrient Management

With 2,641 animal units (10,981 dairy calves and 4,448 goat kids), it is estimated that approximately 8,480,861 gallons of liquid manure and process wastewater and 36,317tons of soldi manure will be produced per year. The permittee owns *approximately* 299.1 acres of cropland and rents about 5,454.3. Given the rotation commonly used by the permittee, 3,795.6 acres are available (or open) to receive manure and process wastewater on an annual basis. The permit requires all landspreading of manure and process wastewater be completed in accordance with an approved nutrient management plan. The permit will require sampling and analysis of manure and process wastewater that will be landspread. Landspreading rates must be adjusted based on sample analysis. The permit requires the permittee to maintain a daily log that documents landspreading activities. The permit also requires the submittal of an annual report that summarizes all landspreading activities. Plans must be updated annually to reflect cropping plans and other operational changes. Among the requirements, the plans must include detailed landspreading information including field by field nutrient budgets.

The permittee is required to implement a number or practices to address potential water quality impacts associated with the land application of manure and process wastewater. Among the permit conditions are restrictions on manure ponding, restrictions on runoff of manure and process wastewater from cropped fields, and setbacks from wells and direct conduits to groundwater (e.g., sinkholes, fractured bedrock at the surface). In addition, the permittee must implement a phosphorus based nutrient management plan that addresses phosphorus delivery to surface waters by basing manure and process wastewater applications on soil test phosphorus levels or the Wisconsin Phosphorus index. Additional phosphorus application restrictions apply to fields that are high in soil test phosphorus (>100 ppm).

The permitee must also implement conservation practices when applying manure near navigable waters and their conduits, referred to as the Surface Water Quality Management Area (SWQMA). These practices include a 100-foot setback from navigable waters and their conduits, a 35-foot vegetated buffer adjacent to the navigable water or conduit, or a practice that provides equivalent pollutant reductions equivalent to or better than the 100-foot setback.

In addition, the permittee must comply with restrictions on land application of manure and process wastewater on frozen or snow-covered ground. Included in these restrictions is a prohibition on surface applications of solid manure ($\geq$12% solids) on frozen or snow-covered ground during February and March.

Monitoring and Sampling Requirements

The permittee must submit a monitoring and inspection program that outlines how the permittee will conduct self-inspections to determine compliance with permit conditions. These self-inspections include visual inspections of water lines, diversion devices, storage and containment structures and other parts of the production area. The permit requires periodic inspections and calibrations of landspreading equipment. The permittee must take corrective actions to problems identified inspections or otherwise notify the Department. Samples of manure, process wastewater and soils receiving land applied materials from the operation must also be collected and analyzed.

Sampling Points

The permit identifies the different sources of land applied materials (e.g., manure storage facilities, milking centers, egg-washing facilities) as “Sampling Points.” For these Sampling Points, the permittee is required to sample and analyze the different sources for nutrients and other parameters which serve as the basis for determining rates of application for these materials. Other areas are also identified as Sampling Points as a means of identifying them as areas requiring action by the permittee, such as an upgrade or evaluation of a certain system or structure (e.g., runoff control systems), even though sampling is not actually required.

Sample Point Number: 001- Concrete WSF; 004- West Slurrystore; 008- East Slurrystore

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total		lb/1000gal	2/Month	Grab	
Nitrogen, Available		lb/1000gal	2/Month	Calculated	
Phosphorus, Total		lb/1000gal	2/Month	Grab	
Phosphorus, Available		lb/1000gal	2/Month	Calculated	
Solids, Total		Percent	2/Month	Grab	

1.1.1 Changes from Previous Permit

None

1.1.2 Explanation of Operation and Management Requirements

Necessary to comply with the permit's terms and conditions.

Sample Point Number: 002- Northern Solid Stacking Pad; 003- Southern Solid Stacking Pad

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total		lbs/ton	Quarterly	Grab	
Nitrogen, Available		lbs/ton	Quarterly	Calculated	
Phosphorus, Total		lbs/ton	Quarterly	Grab	
Phosphorus, Available		lbs/ton	Quarterly	Calculated	
Solids, Total		Percent	Quarterly	Grab	

1.1.3 Changes from Previous Permit

Sample point 010 was removed, it is no longer necessary with the installation of a phased groundwater monitoring system.

1.1.4 Explanation of Operation and Management Requirements

Necessary to comply with the permit's terms and conditions.

Sample Point Number: 005- Feedlot Runoff; 006- Feed Storage Area, and 009- Storm Water Runoff

1.1.5 Changes from Previous Permit

None

1.1.6 Explanation of Operation and Management Requirements

Necessary to comply with the permit's terms and conditions.

2 Groundwater – Monitoring and Limitations

2.1 Groundwater Monitoring System for Calf Source Production Area

Location of Monitoring system: Animal Production Area

Wells to be Monitored: MW-1 (801), MW-2 (802), MW-3 (803), MW-4 (804)

Well Used To Calculate PALs: PALs for indicator parameters contained in the table below may be calculated based on background groundwater quality data after eight (8) consecutive samples have neem collected from designated well(s). Groundwater contamination concentrations shall be minimized and PALs met in groundwater monitoring wells to the extent it is technically and economically feasible.

Point of Standards Application Well(s): To be designated in a Department approved groundwater monitoring plan in accordance with the Schedules section of the permit.

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	*****	N/A	Monthly
Groundwater Elevation	feet MSL	*****	N/A	Monthly
pH Field	su	*****	N/A	Monthly
Temperature	deg F	*****	N/A	Monthly
Conductivity	Number	*****	N/A	Monthly
Chloride	mg/L	*****	N/A	Monthly
COD	mg/L	*****	N/A	Monthly
E. coli	#/100 ml	*****	N/A	Monthly
Nitrogen, Nitrite + Nitrate Total	mg/L	*****	N/A	Monthly
Nitrogen, Ammonia (NH3-N) Total	mg/L	*****	N/A	Monthly
Nitrogen, Total Kjeldahl	mg/L	*****	N/A	Monthly
Phosphorus, Total	mg/L	*****	N/A	Monthly
Solids, Total Dissolved	mg/L	*****	N/A	Monthly

Changes from Previous Permit:

Groundwater monitoring requirements were added, see attachments for further details.

3 Schedules

3.1 Emergency Response Plan

Required Action	Due Date
Develop Emergency Response Plan: Update the written Emergency Response Plan within 30 days of permit coverage, available to the Department upon request.	08/01/2024

3.2 Monitoring & Inspection Program

Required Action	Due Date
Proposed Monitoring and Inspection Program: Consistent with the Monitoring and Sampling Requirements subsection, the permittee shall submit a proposed monitoring and inspection program within 30 days of the effective date of this permit.	08/01/2024

3.3 Annual Reports

Submit Annual Reports by January 31st of each year in accordance with the Annual Reports subsection in Standard Requirements.

Required Action	Due Date
Submit Annual Report #1: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2025
Submit Annual Report #2: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2026
Submit Annual Report #3: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2027
Submit Annual Report #4: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2028
Submit Annual Report #5: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2029
Ongoing Annual Reports: Continue to submit Annual Reports until permit reissuance has been completed.	

3.4 Nutrient Management Plan

Submit an Annual Submit an update to the Nutrient Management Plan by March 31st of each year.

Required Action	Due Date

Management Plan Submittal: Submit any necessary updates to the Nutrient Management Plan to meet the conditions outlined in this permit (see conditions in the Livestock Operational and Sampling Requirements section).	
Submit NMP Update #1: In addition to Annual Updates, submit Management Plan Amendments to the Department for written approval prior to implementation of any changes to nutrient management practices, in accordance with the Nutrient Management requirements in the Livestock Operational and Sampling Requirements section.	03/31/2025
Submit NMP Update #2: Submit an Annual Update to the Nutrient Management Plan.	03/31/2026
Submit NMP Update #3: Submit an Annual Update to the Nutrient Management Plan.	03/31/2027
Submit NMP Update #4: Submit an Annual Update to the Nutrient Management Plan.	03/31/2028
Submit NMP Update #5: Submit an Annual Update to the Nutrient Management Plan.	03/31/2029
Ongoing Management Plan Annual Updates: Continue to submit Annual Updates to the Nutrient Management Plan until permit reissuance has been completed.	

3.5 Groundwater Monitoring System

Required Action	Due Date
Phase 1 Plan - Well Installation: Complete well installation in accordance with ch. NR 141, Wis Adm. Code, within 90 days following permit coverage. Documentation of well construction must be submitted to the Department within 60 days of well installation.	07/01/2024
Phase 2 Plan - Groundwater Monitoring Plan: Submit a Phase 2 groundwater monitoring plan, for Department review and approval, for installation of additional recommended groundwater monitoring wells to be constructed in accordance with the requirements of ch. NR 141, Wis. Adm. Code. The Phase 2 plan shall include the following: a detailed site characterization based on data collected during Phase 1, a summary of groundwater flow direction and seasonal variability, recommendations for the number and location of additional sites and/or groundwater monitoring wells, and a list of proposed sampling parameters and frequency. The department may require additional sites, wells, or sampling parameters to ensure compliance with permit effluent limitations and groundwater quality standards. The Phase 2 plans and specifications shall be submitted to the department within 60 days of collecting the 12th monthly sample associated with the Phase 1 plan.	07/01/2025
Phase 2 - Well Installation: Complete well installation in accordance with ch. NR 141, Wis Adm. Code, within 90 days following department approval. Documentation of well construction must be submitted to the Department within 60 days of well installation.	

3.6 Runoff Control System - Effluent Monitoring System

Applicable to the Feedlot Runoff controls for the calf hutch area (sample point 005).

Required Action	Due Date
Plans and Specifications: Submit plans and specifications for a permanent effluent monitoring system for Department review and approval in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code. The system must establish a record of the volume of effluent and amount of each pollutant discharged from the runoff control system in accordance with Chapter 283.55(1). Wis. Stats.	03/01/2025

Complete Installation: Complete construction of effluent monitoring system. System shall be functional and in operation by the specified Date Due. Post construction documentation shall be submitted within 60 days of completion of the project.	03/01/2026

3.7 Runoff Control System - Installation

Applicable to the Feed Storage Area (sample point 006).

Required Action	Due Date
Plans and Specifications: Submit plans and specifications for a permanent feed storage area runoff control system for Department review and approval in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code. See Standard Requirements for plan content information.	03/01/2025
Complete Installation: Complete construction of runoff control system. System shall be functional and in operation by the specified Date Due. Post construction documentation shall be submitted within 60 days of completion of the project.	03/01/2026

3.8 Submit Permit Reissuance Application

Required Action	Due Date
Reissuance Application: Submit a complete permit reissuance application 180 days prior to permit expiration.	1/01/2029

3.9 Explanation of Schedules

The schedules contained in 3.1, 3.2, 3.3, 3.4, and 3.8 are standard requirements necessary to comply with NR 243 Wis. Admin. Code. Additional explanations of specific schedules are below.

3.5 Groundwater Monitoring System

Groundwater monitoring for the production area is necessary to ensure compliance with permit discharge limitations. See attachments "Calf Source LLC – Assessment of groundwater quality, potential contaminate sources and need for groundwater monitoring at the production site" and "Analytical Results Summary Groundwater Seep (Sump) Sampling Calf Source, LLC" for details.

Plans and specifications for a phase 1 groundwater monitoring system were received by the department March 15, 2022. They were conditionally approved on June 24, 2022. In accordance with NR 243.15(1)(a)1., and NR 108.04(2)d., Wis. Adm. Code, if construction is not commenced within 2 years from the approval date, the approval is void, and a new approval must be obtained prior to commencing construction.

3.6 Runoff Control System – Effluent Monitoring System

Applicable to the feedlot runoff controls for the calf hutch area (sample point 005). A similar schedule was included in the prior permit, but was not completed. See the attached "Notice of Noncompliance – Failure to adhere to permit schedule" for more details.

The department understands that Calf Sources believes this schedule was completed during the prior permit term and that no upgrades to the calf hutch runoff control system are necessary to comply with permit discharge limitations. Department staff feel upgrades to the runoff control system are necessary. The modeling (VFSMOD-W) conducted by GHD was

found to be insufficient by the department. The department proposes this schedule under NR 243.16(3) and NR 283.55 to ensure compliance with NR 243.13 and prevent exceedances of groundwater or surface water quality standards.

3.9 Runoff Control System – Installation

Applicable to the Feed Storage Area (sample point 006). A similar schedule was included in the prior permit, but wasn't completed. See the attached "Notice of Noncompliance – Failure to adhere to permit schedule" for more details. Work during the prior permit determined that plans and specifications were necessary to correct adverse conditions. Two sets of plans and specifications were received, but ultimately rejected by the department as the plan sets did not demonstrate how the design complies with the production area discharge limitations of s. NR 243.13.

Attachments & Links to Supporting Documentation:

1. Calf Source LLC – Assessment of groundwater quality, potential contaminate sources and need for groundwater monitoring at the production site. August 10, 2021.
2. Calf Source Inspection & Report. August 6, 2021
3. Notice of Noncompliance – Failure to adhere to permit schedule. November 19, 2021.
4. Days of Storage Review for Calf Source LLC. November 23, 2021.
5. Groundwater Monitoring Report and Plans and Specifications for Monitoring System. March 15, 2022.
6. Conditional Approval of Plans & Specifications for a Groundwater Monitoring Plan at Calf Source LLC. June 24, 2022.
7. Analytical Results Summary Groundwater Seep (Sump) Sampling Calf Source, LLC. December 5, 2023.
8. Conditional Approval of the Nutrient Management Plan. March 27, 2024

Expiration Date:

06/30/2029

Prepared By: Holly Stegemann Agricultural Runoff Management Specialist Date: 04/02/2024

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: August 10, 2021 FILE REF: Calf Source LLC

TO: Holly Stegemann, Agricultural Runoff Specialist, Green Bay
Ben Uvaas, CAFO Compliance/Enforcement Coordinator, Oshkosh

FROM: Joe Baeten, Northeast Watershed Management Team Supervisor, Green Bay

SUBJECT: Calf Source LLC – Assessment of groundwater quality, potential contaminate sources and need for groundwater monitoring at the production site.

Background: Calf Source LLC is located in the northwest quarter of section 4, T21, R21E in the Town of Morrison, Brown County. The site consists of 12 dairy young stock barns, two goat barns, a large calf hutch pad, a vegetated treatment area, four manure storage facilities, a feed storage area and a few other ancillary buildings and roads (see figure 1). Note: purple polygons in figure 1 are areas with wetland indicators (maximum extent wetland).

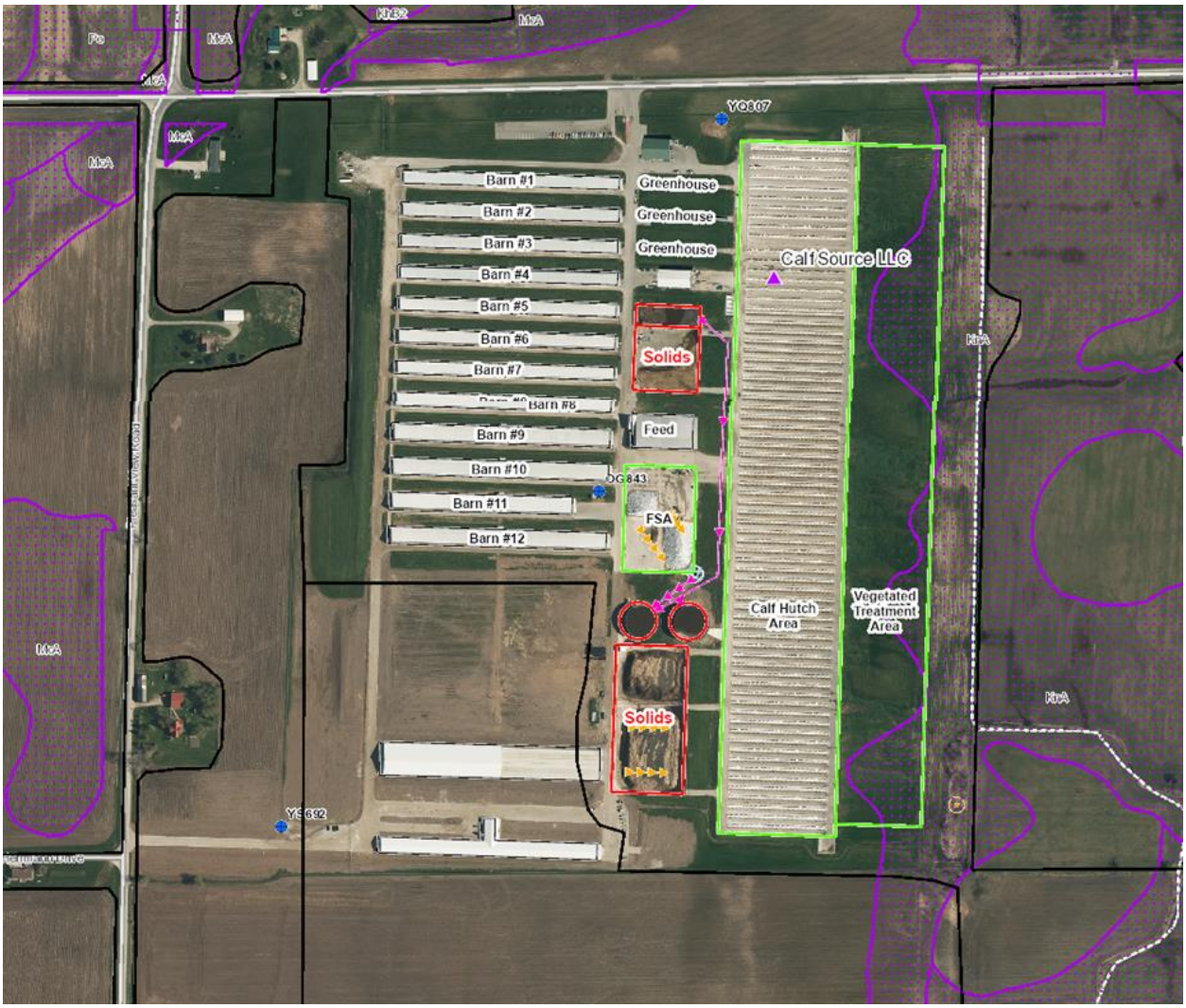

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Figure 1: Calf Source LLC production site.

The farm raises approximately 11,000 calves and 8,000 goat kids and generates 8,480,861 gallons of liquid manure and 36,317 tons of solid manure annually. The farm has 3,639.6 spreadable acres available for land application of manure. This information can be found in the farm's March 2021 Annual Nutrient Management Plan update. The farm received its first WPDES permit on June 1, 2002 and is nearing the end of their fourth WPDES permit term.

A history of the farm's noncompliance is as follows:

- October 31, 2017: A notice of noncompliance was issued for cross-connections to potential contamination sources identified during a sanitary survey.
- January 8, 2019: A notice of noncompliance was issued for land applying manure within 100 feet of a private well on field 700-022.

Site geology/hydrogeology:

The underlying bedrock is a Silurian dolomite, more specifically, the Burnt Bluff Group. This group is a thick dolomite group and is heavily fractured and tends to be karstic. Many bedrock outcrops are present to the south of the farm's production site (2015-06-03, CAFO WPDES Compliance Report). The facility is located approximately 7 miles east of the Niagara Escarpment (Luczaj, 2011).

Available depth to bedrock maps shows the farm production site is located on soils with less than 20 feet to bedrock. Shallower soils are located to the southeast and southwest (Source: SnapMaps).

The production site is located approximately 900 feet above average sea level. Land elevation is gradual to the east, north and west but drops off sharply approximately 30 feet directly to the south of the production site. It's in this location where exposed bedrock has been observed (Source: SnapMaps).

Based on the USDA NRCS soils data, the majority of the production site is comprised of the Waymor silt loam, 2 to 6 percent slopes. A typical soil profile consists of silt loam over loam with no features that restrict the downward movement of water in the upper 80 inches (ex. claypan or fragipan). It's a well-drained soil and the depth to the water table is typically 60 to 80 inches below ground's surface. To the east of the barns, calf hutches and waste storage facilities and covering about half of the VTA is the Kibbie silt loam, 1 to 3 percent slopes. This soil has a typical soil profile consisting of silt loam over a stratified fine sand to silt loam with no features that restrict the downward movement of water in the upper 80 inches. It's a somewhat poorly drained soil and the depth to the water table is typically 0 to 12 inches below ground's surface (Source: Web Soil Survey).

On April 15, 2015, the department spoke with the landowner south of the farm who identified the presence of artisan springs on the east and south ends of the property. During an inspection of the field, shallow/exposed bedrock and artisan springs were observed (2015-06-03 CAFO WPDES Compliance Report).

There are three public water supply wells currently in operation at or adjacent to the production site: these are YQ807, OG843, and YS692, see figure 1 for well locations. Well YQ807 is located on the north end of the production site and reached a limestone/dolomite bedrock at 7 feet below ground's surface. Well OG843 is located in the center of the production site and reached a limestone bedrock at 7 feet below ground's surface. Well YS692 is located southwest of the production site and reached a limestone/dolomite bedrock at 11 feet below ground's surface. Wells YQ807 and YS692 are drilled and cased through the Maquoketa Formation into the Galena and Platteville dolomite formations and the St. Peter sandstone formation. The depth of these two wells are both greater than 800 feet with casing

extending to the base of the Maquoketa Shale at a depth of approximately 650 feet. Well OG843 is shallower with a total depth of 282 feet and draws water from the Silurian dolomite above the Maquoketa Formation. This well is cased to 55 feet depth in the Silurian dolomite. The static water level in well OG843 when installed was 20 feet below ground's surface.

Two wells were also abandoned at the farm: WI869 and SX684. Well WI869 was drilled in the Silurian dolomite, had a casing depth to 104 feet and had 5 feet of clay over bedrock. The well was abandoned on November 29, 2016, due to poor water quality. Well SX684 was drilled in the Silurian dolomite, had a casing depth to 103 feet and had 8 feet of clay over bedrock. The well was abandoned on August 9, 2017, due to bad water samples coliform and E coli. See Appendix A for well construction reports.

Groundwater quality at and adjacent to production site:

The UW-Stevens Point Well Water Viewer has 19 groundwater samples submitted for S4 T21N R21E of which 5 samples exceed the enforcement standard for nitrate. An additional 8 samples were analyzed in this section for bacteria and one tested positive. Exceedances of the nitrate enforcement standard and positive bacteria tests were also recorded in the sections to the west, south and east.

For the three wells drilled and screened in the Silurian (active and abandoned), the DNR Groundwater Retrieval Network (https://dnr.wi.gov/GRNext/WellInventory/List) had the following groundwater sample information and results:

- OG843: none
- SX684: sampled 6/16/2005, coliform, total was absent
- WI869: sampled 1/9/2007, coliform, total was absent

A review of the RR Sites Map (https://dnr.wisconsin.gov/topic/Brownfields/rrsm.html) identified the closest known discharge events to be approximately 2 miles from the farm (Gilson Agri Products and Morrison Garage Inc.). The Gilson Agri Products release was an agricultural related release (fertilizer, pesticides, herbicides, and insecticides) but resulted in limited contamination in a small, shallow area.

Department inspections, notifications from the facility and sampling reported by the facility have also identified groundwater quality issues at the site. The following list summarizes those inspections and notifications:

- April 14, 2015, the farm notified the department that manure laden water was flowing out of the ground (bedrock) on the southern end of the production site. The farm dug sumps to investigate and identified manure flowing 'up' through the bedrock. Clear water seeps were observed from the unconsolidated sediment.
- April 15, 2015, the department observed manure pumping of seepage from sumps. The manure laden water was no longer flowing upward through the hole in the bedrock but rather was flowing along a bedrock plane laterally.
- April 16, 2015, the department sampled the groundwater in the sumps adjacent to the manure storage. Ammonia was 133 & 529 mg/L, phosphorus was 46 & 14.1 mg/L, total nitrogen was 182 & 630 mg/L, COD was 1,180 & 6,600 mg/L, nitrate was 0.77 & 0.21 mg/L, and BOD was 172 & 3,120 mg/L. See Appendix B for results.
- May 1, 2015, the department observed clean water in the trenches where a new barn was being built west of the manure storages.

Continued monitoring over approximately 6 years of the groundwater sumps that were installed in 2015 show elevated ammonia, fecal coliform bacteria, and nitrate above the Preventative Action Limits (PALs) and Enforcement Standards (ESs). In addition, BOD, COD, and phosphorus levels are elevated. See

Appendix D for the analytical groundwater seep results since 2015 to present. Figure 2 below shows the locations of the four sumps that are monitored.

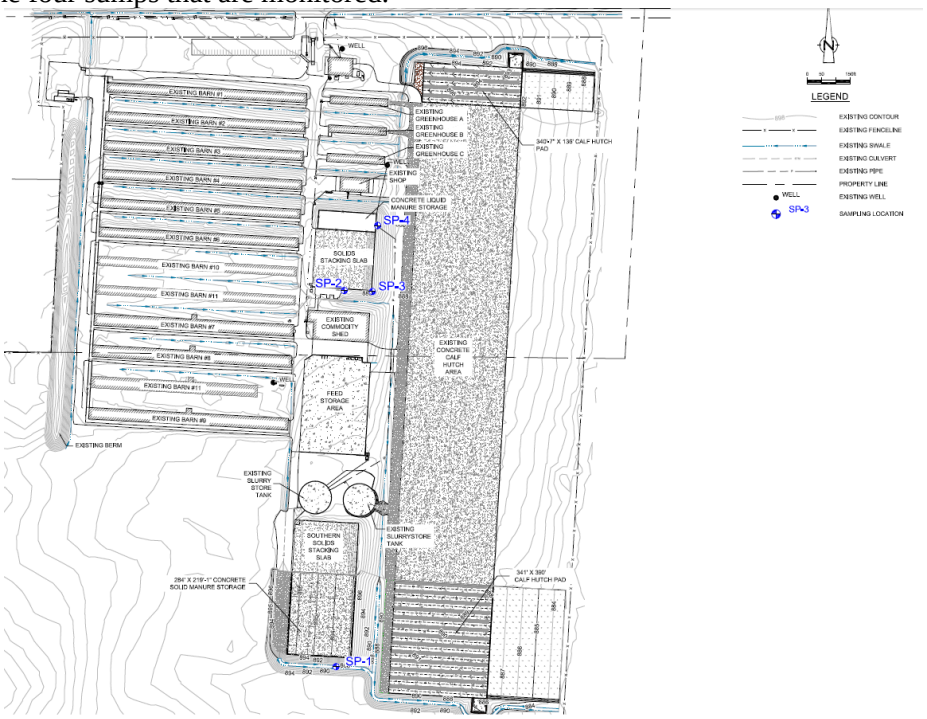

Figure 2: Location of sumps at Calf Source LLC.

Calf Source is a public water system that is served by wells OG843 and YQ807. There is a common point of entry where water samples are taken for this system which is representative of the two wells being blended. The system was last inspected on October 24, 2017 and resulted in a notice of noncompliance due to cross-connections to potential contamination sources being identified. Since 2017, this system was sampled and tested 16 times for coliform and fecal bacteria, and all resulted in no detections. This system was also sampled 3 times for nitrates on 3/1/2018, 1/31/2020, and 1/11/2021 with results of 0.69, 0.85, and 0.87 mg/L, respectively. (https://dnr.wi.gov/dwsviewer/)

Potential production site contaminant sources:

Manure Storages

The northern liquid manure storage (sample point 001) was built in 2000 and modified in 2015 (rubber and concrete liner installed). The northern solids manure storage (sample point 002) was built pre 2005 and was relined in 2015. The southern solids manure storage (sample point 003) was initially constructed prior to 2014 with the southern half being built in 2014 and the northern half resurfaced in 2015. The western slurrystore (sample point 004) was built in 2009 and expanded in 2012. The eastern slurrystore (sample point 008) was built in 2016.

The August 2000, Construction Plan for the northern manure storage identified some sand/gravel was used beneath the structure for grading. The initial plans and specs recommended no sand/gravel or minimum necessary to grade isolate low spots. This construction plan included the following condition:

- Waste Storage Tank: Stacking slab should be monitored for excessive liquid accumulation and land spread when appropriate following an approved nutrient management plan or pumped into feed waste tank until it can be land spread safely.

Department inspections of the waste storages and the observations are as follows:

- June 10, 2011, inspection identified clean water seepage occurring through the wall into the storage. The farm recently installed a tile sump system to divert drainage water away from storage walls.
- April 14, 2015, inspection documented a small amount of brown water discharge from the sump adjacent to the liquid concrete tank and northern manure stacking pad.
- April 14, 2015, the farm dug 5 pits (3 along the southern fence line, 1 along the south corner of slid stacking pad storage, and 1 along the east wall) and all were dry.
- April 16, 2015, an additional test pit was dug adjacent to northern most liquid concrete storage. Brown water was seeping into the pit bottom from a gravel layer. Another pit was dug adjacent to the manure transfer line; this pit was dry. A test pit was also dug adjacent to the slurrystore down to bedrock and was also dry.
- April 20, 2015, the farm emptied the slurrystore and conducted a visual observation; no major cracks were observed.
- April 22, 2015, the farm reported they had emptied the northern liquid storage and transferred the manure solids form the southern stacking storage to the northern stacking storage area to conduct a visual inspection. No observed cracks were documented at the northern storage.
- April 23, 2015, the department inspected the liquid manure storage, completely emptied, and observed several cracks along the walls. No cracking was observed on the floor. Repairs of the cracks in the wall were also observed. The southernmost solid manure stacking storage was also inspected, and no obvious cracks were identified.
- April 24, 2015, the department observed potential manure seeps from a 2014 aerial photo and shared that information with the farm. The farm responded that several repairs were made in that location in 2014 during the construction of the new storages.
- April 24, 2015, the farm's consultant inspected the concrete liquid pit on the southern solid stacking storage and did not observe any issues.
- May 1, 2015, department inspection of the southern storage area floor and walls showed hairline cracks on the floor.
- May 2, 2015, the farm reported all storages were empty, except slurrystore, and no obvious signs of a leak were visible.
- May 6, 2015, the farm's consultant reported they inspected the slurrystore and that the concrete bottom was in excellent condition.
- May 14, 2015, the farm reported a small volume of brown water was pumped from the sump adjacent to the northern liquid storage tank. The storage tank was completely empty.
- June 2, 2015, the department inspected the installation of an EPDM liner in the liquid storages. The department also observed manure seeping from the older stacking storage area into the newer storage.
- June 9, 2015, the farm's consultant reported additional manure seepage was found when digging a test pit north of the north solid stacking pad storage. The department inspected these new test pits and observed manure seepage from the gravel base of the storage foundation. Other test pits dug around the slurrystore area did not have any observed manure and test pits next to the two southern stacking areas had signs of minor seepage through hairline cracks.
- June 12, 2015, the department inspected the test pit at the northern manure storages and noted the flow from under the base appeared to have stopped or was very slow.
- June 18, 2015, the farm reported that the test pits had some slow seeps but flow as a lot less than observed on June 9th.
- May 16, 2016, inspection did not identify any issues with the manure storages.

Manure Transfer

The manure transfer line from the northern liquid waste storage to the slurrystore was built in 2009. The leachate transfer line to the slurrystore was built in 2012 and was evaluated in 2018 (further action is required).

Department inspections of the waste transfer lines, and the observations are as follows:

- April 20, 2015, the manure transfer line was pressure tested and held 70 PSI of pressure with no drop in pressure.

Feed Storage

The feed storage area was built prior to 2005. The feed storage is approximately 1.7 acres in size.

Department inspections of feed storage area and the observations are as follows:

- June 9, 2015, a test pit dug adjacent to the feed storage did not have any observed manure impacts.
- May 16, 2016, inspection did not note any issues with the feed storage or runoff controls but did call for an evaluation to ensure permit conditions are met.
- Current runoff controls consist of a first flush collection system (the first 0.35 inches of runoff) with excess runoff overflowing to a drainage swale.

Calf Hutch Area and Vegetated Treatment Area (VTA)

The calf hutch and VTA areas were built over time between the years 2000-2014 and was last evaluated by the department in 2018 (further action is required). The August 2000, Construction Plan, had the following conditions:

- Buffer Areas: Buffer areas vegetation must be mowed and removed (3) times yearly. Subsequent evaluations did not clearly indicate whether or not the vegetation is removed after mowing.
- Any erosion problems – rilling, washouts, bare spots or channeling of the runoff must be repaired immediately.
- Buffer effectiveness must be monitored yearly by Land Conservation Department, Department of Agriculture, Trade and Consumer Protection agency, Department of Natural Resources or Natural Resources Conservation Service.

Department inspections of these areas and the observations are as follows:

- June 10, 2011, inspection identified areas of the VTA in need of repair.
- May 16, 2016, inspection did not note any issues of the VTA but did call for an evaluation to ensure permit conditions are met.
- October 21, 2019, wet weather inspection documented the VTA was densely vegetated with no ponded areas or channelized flow more than 15 feet downgradient of the spreader bar. Some recent maintenance, erosion matting, was observed. A sample of the calf hutch runoff just before entering the VTA was collected. The sample results showed ammonia at 27.5 mg/L, e. coli at 6,131,000 cfu/100 mL, COD at 1,700 mg/L, total nitrogen at 114, mg/L, nitrate at 0.17 mg/L, and phosphorus at 13.5 mg/L. See Appendix C for results.

Conclusions and Recommendations:

Conclusions

Existing groundwater quality information indicates that there may be an ongoing release of manure to groundwater. High levels of ammonia, BOD, phosphorus (which do not move easily through the soil profile) and fecal coliform bacteria counts in the sump sample results are indicative of a direct release of

manure to groundwater. In addition, the high ammonia to nitrate ratio also indicates the release from a direct source.

The observation of clean water migration through the manure storage concrete walls on June 10, 2011, and the observation of manure seeping through the gravel layer beneath the norther storage on April 16, 2015, indicate the manure storages were likely not watertight structures prior to the upgrades. The August 2000, Construction Plan requires the removal of liquids from the solid storage area which may also indicate the structure may not have been built to hold liquid waste. Sumps 2, 3, and 4 continue to show elevated levels of manure impacted groundwater even after upgrades were made to the manure storage structures. The groundwater quality in sump 1 has significantly improved after the 2015 improvements to the waste storages which may also demonstrate there is a connection between the manure storages to groundwater beneath the facility. Based on the available information, the main source of contamination appears to be in the area of the northern manure storages.

The movement of manure in groundwater may also be occurring vertically at times prior to moving horizontally within the bedrock. This is concerning as the monitoring of the sumps may not be properly defining the degree and extent of the contamination. It is typical in karst areas of northeast Wisconsin to have a large vertical hydraulic gradient at groundwater divides and areas of elevated bedrock. The facility is located at an area of elevated bedrock which is likely a whaleback-like geologic structure similar to those in the Morrison and Wayside areas. The April 14, 2015, inspection identified manure flowing 'up' out of the bedrock with clean water seeping from the unconsolidated material above the bedrock which also indicates vertical movement through the bedrock and not horizontally through the unconsolidated sediment. Finally, abandonment of wells WI869 and SX684 due to water quality issues, specifically total coliform, demonstrates that contaminants moved over 100 feet vertically through the local bedrock to reach the well screen. This movement through the bedrock would have occurred rapidly if coliform bacteria survived and were culturable.

The intensity of the vertical movement of groundwater may be variable throughout the year. The sump groundwater quality data tends to show high concentrations during the growing season and lower concentrations during the winter months. In addition, often times during the winter months there is not enough water in the sumps for sample collection. These are some examples that may indicate fluctuations in vertical groundwater movement.

Overall, the VTA is well maintained by the farm and repairs are made in accordance with the August 2000, Construction Plan, based on visual observations. The soils beneath the VTA are well drained loams/silt loams with groundwater typically within 5 feet of the ground's surface and, as a result, could pose a risk of leaching nitrogen to groundwater if excess nitrogen is discharged from the calf hutch area to the VTA. The VTA is comprised of grasses which have a nitrogen recommendation of 130 lbs. N per acre assuming grass hay and an oil organic matter content between 2.0-9.99. (Laboski, C. & Peters, J., 2012)

The calf hutch area that discharges to the VTA is approximately 742,746 square feet, or 17.05 acres, in size. With an average yearly precipitation of 30.85 inches, a discharge of 1,909,590 cubic feet, or 14,283,733 gallons, of runoff are discharged to the VTA annually. The VTA is approximately 1,011,845 square feet, or 23.23 acres, in size. (Personal Communication, Bernie Michaud, DNR, July 22, 2021).

The October 21, 2019, wet weather inspection documented calf hutch runoff had a concentration of 114 mg/L total nitrogen. If this concentration is applied uniformly to the 14,283,733 gallons that are discharged to the VTA annually, it's estimated that approximately 13,515 lbs. nitrogen are discharged to the VTA. Since the majority of the inorganic nitrogen being discharged to the VTA is ammonia, there is likely some loss to the atmosphere however, much of the ammonia is likely infiltrated into the soil during

the rain event. Assuming the VTA soil pH is <7, it's estimated 2.5% of the ammonia is lost to the atmosphere (N Loss Calculator). This results in 13,177 lbs. nitrogen being discharged and infiltrated to the VTA or 567 lbs. N / acre. Note:

- There are other nitrogen inputs and outputs but those are assumed to be minor.
- Based on the October 21, 2019, sample results, there is a significant amount of nitrogen in the organic form. It's assumed the inputs into the organic reserve of the soil is equal to the mineralization rate.

Since only one sample was collected from the calf hutch area at the facility, a similar analysis with other available data will also be done. Between 2014-2015, the department sampled runoff from other calf hutch areas for the pollutant concentrations. The sample results from those events for ammonia are as follows:

	Ammonia (mg/l)
700 calves on 15 acres	32.3
2000 calves on 20 acres	53.3
20 calves on <1 acre	2.4

While it appears the more calves on site the higher the ammonia concentration from the runoff, the average (29.3 mg/L) of the three sites will be used. First, it should be acknowledged that this analysis will only look at the ammonia fraction of nitrogen since the total nitrogen concentration was not provided so it's fair to say this is an under estimation of the nitrogen loading. If this average concentration is applied uniformly to the 14,283,733 gallons discharged to the VTA annually, it's estimated that approximately 3,474 lbs. nitrogen are discharged to the VTA. Using the same assumptions of ammonia loss (2.5%), it's estimated 3,389 lbs. nitrogen are discharged and infiltrated to the VTA or 146 lbs. N / acre.

A third example will be done based on calf hutch runoff results from a CAFO in a neighboring county. On May 3, 2019, calf hutch runoff was collected at Halls Calf Ranch, Kewaunee County, that showed a concentration of 3.74 lbs N/1,000 gallons or 448 mg/L Nitrogen. If this concentration is applied uniformly to the 14,283,733 gallons discharged to the VTA annually, it's estimated that approximately 53,421 lbs. nitrogen are discharged to the VTA. Using the same assumptions of ammonia loss (2.5%), it's estimated 52,085 lbs. nitrogen are discharged and infiltrated to the VTA or 2,242 lbs. N / acre.

All of these analysis show that the amount of nitrogen being discharged to the VTA is higher than the UW recommendation of 130 lbs. per acre. The UW recommendation also assumes the crop is being removed (i.e. 130 lbs. N is in the removed crop) which its unclear whether or not the facility is doing this. Based on this data, it's likely excess nitrogen may be discharged from the VTA to groundwater.

Recommendations

Impacts to groundwater by the facility have occurred and may continue to occur however, the evaluation of the extent of impact has not been properly defined. It should also be noted that the groundwater quality data from the sumps come from a monitoring system that is not designed to appropriate groundwater monitoring standards. As a result, require the installation and monitoring of a permanent groundwater monitoring network at the production site in accordance with chs. NR 140 and 141 and s. NR 214.21. This should be done in two phases.

The first phase should include a minimum of 4 well nests comprised of 2 wells in each nest. One well nest should be located upgradient of the waste storages, calf hutch area and VTA, one well nest should be located downgradient the manure storages, one well nest should be located down gradient of the VTA and the final well nest should be located near/adjacent to the northern manure storage and between the

northern and southern manure storages. Each well nest should include a water table observation well that is has a screen length up to 15 feet, but not less than 10 feet, that is able to monitor the fluctuations of the water table. The second well should be a piezometer that is cased 20 feet below the typical water table elevation with a screen no more than 5 feet in length. In addition, monitoring of well OG843 and continued monitoring of the four sumps should also be included as part of the phase 1 monitoring plan.

Design, construction, installation, testing, and documentation of monitoring wells should be done in accordance with ss NR 214.14(21)(2), Wis. Adm. Code. Each well should be sampled monthly in accordance with ss. NR 214.14(21)(4), Wis. Adm. Code, during the first year and analyzed for:

- Depth to groundwater (ft)
- Groundwater elevation (feet MSL)
- Temperature (deg F)
- Nitrogen, Nitrite + Nitrate (as N) dissolved (mg/L)
- Chloride dissolved (mg/L)
- pH field (su)
- COD (mg/L)
- Carbon, total organic (mg/L)
- Nitrogen, total Kjeldahl dissolved (mg/L)
- Nitrogen, ammonia dissolved (mg/L)
- Solids, total dissolved (mg/L)
- Potassium dissolved (mg/L)
- Phosphorus dissolved (mg/L)
- E. coli (#/100 ml)

All samples should be filtered. In addition, for each monthly sampling event, the horizontal and vertical hydraulic gradients shall be calculated using measured groundwater elevations at each well nest. Results should be reported to the department within 30 days of each sampling event.

A proposed phase 1 plan should be submitted to the department for review and approval prior to installation of the monitoring network. Once approved, the groundwater monitoring network should be installed within 90 days of the approval.

Within 90 days of completion of the 12 rounds of monthly sampling, the facility should submit to the department a phase II plan for installation of remaining production area groundwater monitoring wells for department review and approval. This plan should include the following: a detailed site characterization based on data collected during phase 1; a summary of groundwater flow directions and seasonal variability; recommendations for the number and locations of additional groundwater monitoring wells; and a list of proposed sampling parameters and frequency. The department may require additional wells to properly monitor the production area. (Note: this phased approach is consistent with the February 1, 2018, Kinnard Farms Inc WPDES permit) Monitoring of phase 1 wells should continue after the 12 rounds of monthly on a quarterly basis until the phase 2 plan is approved.

In addition to the installation of a permanent groundwater monitoring network, the farm should evaluate the northern manure storages, transfer line and reception tank. The DNR CAFO Engineer Team should assist with the extent of evaluation needed, as necessary.

In addition to the well nest located down gradient of the VTA, the farm should submit to the department for review and approval a revised vegetated treatment area operation and maintenance plan that, at a minimum, includes:

- Harvest and removal of vegetation plan
    - Includes recording of tonnage removed and sampling of harvested vegetation for crude protein content (used to calculate nitrogen removal)

- Annual soil sampling plan that:
    - Measures P, K, OM, pH, and CEC levels
    - Nitrogen testing (PPNT and/or PSNT) that assess nitrogen movement through the soil profile as wells as soil nitrogen availability.
- Sampling plan for the calf hutch area runoff to characterize the nutrient loading rate to the VTA

Sources:

- 2000-08, Construction Plan
- 2011-07-06, Calf Source Permit Reissue Status, NMP Approval and Inspection Summary, inspection date 6-10-2011
- 2015-06-03, CAFO WPDES Compliance Report, inspection dates 4-14-15, 4-15-15, 4-16-15, 4-23-15, 5-1-15, and 6-2-15
- 2015-06-26, CAFO WPDES Compliance Report, inspection dates 6-9-15, 6-12-15
- 2015-11-19, CAFO WPDES Compliance Report, inspection date 10-8-15
- 2016-07-11, CAFO WPDES Compliance Report, inspection date 6-16-16
- 2017-10-31, Sanitary Survey Report and Notice of Noncompliance, inspection date 10-24-2017
- 2019-01-08, Notice of Noncompliance, inspection date 10-22-18
- DNR Groundwater Retrieval Network: https://dnr.wi.gov/GRNext/WellInventory/List
- DNR Public Drinking Water System Data: https://dnr.wi.gov/dwsviewer/
- Laboski, C.A.M, and Peters, J. B, 2012, A2809 Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin.
- Luczaj, J. A., 2011, Preliminary Geologic Map of the Buried Bedrock Surface, Brown County, Wisconsin, Wisconsin Geological and Natural History Survey Open-File Report 2011-02.
- N Loss Calculator, Estimating Nitrogen Budgets for Soil-Crop Systems
- SnapMaps: https://snapplus.wisc.edu/maps/
- Web Soil Survey: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Appendix A: Well Construction Reports

Well Construction Report — *WISCONSIN UNIQUE WELL NUMBER* **YQ807**

Drinking Water and Groundwater - DG/5 — Form 3300-077A
Department of Natural Resources, Box 7921
Madison WI 53707

Property Owner	MILK SOURCE GENETICS/TODD WILLER
Phone #	
Mailing Address	N3569 VANDEN BOSCH RD
City	KAUKAUNA
State	WI
Zip Code	54130
County	Brown
Co. Permit #	
Notification #	6482714604
Completed	07-14-2016
Well Constructor (Business Name)	VAN DE YACHT LEO WELL DRILLING INC
Lic. #	6097
Facility ID # (Public Wells)	405207000
Address	1267 LAKEVIEW DR GREEN BAY WI 54313
Well Plan Approval #	05-3-0034
Approval Date (mm-dd-yyyy)	06-30-2016
Hicap Permanent Well #	91773
Common Well #	
Specific Capacity	0.4
3. Well serves	1 # of farm
	Non-community
	Heat Exchange____# of drillholes
Hicap Well ?	No
Hicap Property ?	Yes
Hicap Potable ?	

1. Well Location

Fire # (if avail.)	
Town of MORRISON	
Street Address or Road Name and Number	3586 COOPERSTOWN RD
Subdivision Name	
Lot #	
Block #	
Latitude / Longitude in Decimal Degree (DD)	44.3276 °N -87.9619 °W
Method Code	GPS006
NE NW or Govt Lot #	
Section	4
Township	21 N
Range	21 E

2. Well Type Replacement
of previous unique well # WI869 constructed in 2007
Reason for replaced or reconstructed well ?
occasional unsafe samples
Construction Type Drilled

4. Potential Contamination Sources - ON REVERSE SIDE

5. Drillhole Dimensions and Construction Method

Dia. (in.)	From (ft.)	To (ft.)
12	Surface	11
10	11	620
6	620	832

Upper Enlarged Drillhole		Lower Open Bedrock
No	Rotary - Mud Circulation	No
Yes	Rotary - Air	Yes
No	Rotary - Air & Foam	No
No	Drill-Through Casing Hammer	
No	Reverse Rotary	
No	Cable-tool Bit ____In. dia...	No
No	Dual Rotary	No
Yes	Temp. Outer Casing 10In. dia	
Yes	Removed? 11depth ft. (If NO explain on back side)	

Geology Codes				8. Geology Type, Caving/Noncaving, Color, Hardness, etc...	From (ft.)	To (ft.)
-	-	C	-	Clay	Surface	7
-	-	L	-	Limestone/Dolomite	7	290
U	-	H	-	Blue, Shale	290	612
-	-	L	-	Limestone/Dolomite	612	810
-	-	N	-	Sandstone	810	832

6. Casing, Liner, Screen

Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)
6	New black steel plain end astm a53b18.97# per ft hyundai pipe	Surface	621
Dia. (in.)	Screen type, material & slot size	From (ft.)	To (ft.)

9. Static Water Level
380 ft. below ground surface

10. Pump Test
Pumping level 580 ft. below surface
Pumping at 70 GP M for 2 Hrs.
Pumping Method ?

11. Well Is
12 in. above grade
Developed ? Yes
Disinfected ? Yes
Capped ? Yes

7. Grout or Other Sealing Material
Method Bradenhead

Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
Neat cement grout	Surface	621	220 S

12. Notified Owner of need to fill & seal ?
Filled & Sealed Well(s) as needed? Yes
Sixel/Schwinn

13. Constructor / Supervisory Driller	Lic #	Date Signed
TLV		07-14-2016
Drill Rig Operator	**Lic or Reg #**	**Date Signed**
DS		07-14-2016

WISCONSIN UNIQUE WELL NUMBER **YQ807**

4a. Potential Contamination Sources Is the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		100	Animal Barn Pen		275
Other Contamination Sources		124	Septic or Holding, or POWTS Tank		125

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 08-08-2016 Created by: WELL CONST LOAD Updated On: 09-26-2017 Updated by: PWS TRANSFER

Well Construction Report
WISCONSIN UNIQUE WELL NUMBER OG843

Drinking Water and Groundwater - DG/5
Department of Natural Resources, Box 7921
Madison WI 53707
Form 3300-077A

Property Owner: CALF SOURCE	Phone #: (920)766-5335
Mailing Address: N3603 VANDEN BOSCH	
City: KAUKAUNA	State: WI Zip Code: 54130
County: Brown	Co. Permit #:	Notification #:	Completed: 07-25-2000
Well Constructor (Business Name): VAN DE YACHT LEO WELL DRILLING INC	Lic. #: 6097	Facility ID # (Public Wells): 405207000
Address: 3383 OAK FOREST DR, GREEN BAY WI 54313	Well Plan Approval #: 05-3-0034	Approval Date (mm-dd-yyyy): 06-16-2005
Hicap Permanent Well #: 67722	Common Well #: 001	Specific Capacity: 0.4

1. Well Location
Town of MORRISON
Fire # (if avail.)
Street Address or Road Name and Number: COOPERSTOWN RD
Subdivision Name | Lot # | Block #
Latitude / Longitude in Decimal Degree (DD): °N °W
Method Code: GPS008
NW NE or Govt Lot #: | Section: 4 | Township: 21 N | Range: 21 E

2. Well Type New Well
of previous unique well # constructed in
Reason for replaced or reconstructed well ?: CALF BARN
Construction Type: Drilled

3. Well serves 1 # of CALF BARM
Non-community
Heat Exchange____# of drillholes
Hicap Well ? No
Hicap Property ? No
Hicap Potable ?

4. Potential Contamination Sources - ON REVERSE SIDE

5. Drillhole Dimensions and Construction Method

Dia. (in.)	From (ft.)	To (ft.)
9	Surface	62
6	62	282

Upper Enlarged Drillhole / Lower Open Bedrock
Yes Rotary - Mud Circulation .....
Yes Rotary - Air .....
Rotary - Air & Foam .....
Drill-Through Casing Hammer
Reverse Rotary
Cable-tool Bit ____In. dia...
Dual Rotary .....
Temp. Outer Casing ____In. dia
Removed? ____depth ft. (If NO explain on back side)

Geology Codes		8. Geology Type, Caving/Noncaving, Color, Hardness, etc...	From (ft.)	To (ft.)
	C	CLAY	Surface	7
	L	LIMESTONE	7	275
	H	SHALE	275	282

6. Casing, Liner, Screen

Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)
6	NEW BLACK STEEL PLAIN END WELDED ASTM-A-53B 18.97# PER FT LTV PIPE	Surface	62
Dia. (in.)	Screen type, material & slot size	From (ft.)	To (ft.)

7. Grout or Other Sealing Material
Method TREMIE PIPE-PUMPED

Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
NEAT CEMENT GROUT	Surface	62	12 S

9. Static Water Level
20 ft. below ground surface

10. Pump Test
Pumping level 180 ft. below surface
Pumping at 69 GP M for 2 Hrs.
Pumping Method ?

11. Well Is
12 in. above grade
Developed ? Yes
Disinfected ? Yes
Capped ? Yes

12. Notified Owner of need to fill & seal ?
Filled & Sealed Well(s) as needed? No
N/APP

13. Constructor / Supervisory Driller	Lic #	Date Signed
TV		07-25-2000
Drill Rig Operator	Lic or Reg #	Date Signed
		07-25-2000

4a. Potential Contamination Sources Is the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Manure Hopper or Reception Tank - Liquid Tight		400	Foundation Drain to Clearwater		32
Building Overhang		30	Barn Gutter		150
Clearwater Sump		45	Septic or Holding, or POWTS Tank		50

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 09-13-2000 Created by: WELL CONST LOAD Updated On: 09-26-2017 Updated by: PWS TRANSFER

Well Construction Report
WISCONSIN UNIQUE WELL NUMBER YS692

Drinking Water and Groundwater - DG/5
Department of Natural Resources, Box 7921
Madison WI 53707
Form 3300-077A

Property Owner: Milk Source Holdings	Phone #
Mailing Address: N3569 Vanden Bosch Rd	
City: Kaukauna	State: WI Zip Code: 54130
County: Brown	Co. Permit #	Notification #	Completed: 04-24-2017
Well Constructor (Business Name): VAN DE YACHT LEO WELL DRILLING INC	Lic. #: 6097
Address: 1267 LAKEVIEW DR, GREEN BAY WI 54313	
Hicap Permanent Well #: 92073	Common Well #:

Facility ID # (Public Wells): 405207000
Well Plan Approval #: 05030034
Approval Date (mm-dd-yyyy): 04-05-2017
Specific Capacity: 0.7

1. Well Location
Town of MORRISON
Fire # (if avail.)
Street Address or Road Name and Number: 3586 COOPERSTOWN, SW WELL
Subdivision Name | Lot # | Block #
Latitude / Longitude in Decimal Degree (DD): 44.3262 °N -87.9613 °W
Method Code: GCD013
SE NW or Govt Lot #: Section: 4 Township: 21 N Range: 21 E

2. Well Type Replacement
of previous unique well # SX684 constructed in 2005
Reason for replaced or reconstructed well ?
high nitrate and coliform
Construction Type: Drilled

3. Well serves 1 # of barn
Non-community
Heat Exchange____# of drillholes
Hicap Well ? Yes
Hicap Property ? Yes
Hicap Potable ?

4. Potential Contamination Sources - ON REVERSE SIDE

5. Drillhole Dimensions and Construction Method

Dia. (in.)	From (ft.)	To (ft.)
12	Surface	11
10	11	628
6	628	862

Upper Enlarged Drillhole		Lower Open Bedrock
No	Rotary - Mud Circulation	No
Yes	Rotary - Air	Yes
No	Rotary - Air & Foam	No
No	Drill-Through Casing Hammer	
No	Reverse Rotary	
No	Cable-tool Bit ____In. dia...	No
No	Dual Rotary	No
Yes	Temp. Outer Casing 10In. dia	
Yes	Removed? 11depth ft. (If NO explain on back side)	

Geology Codes				8. Geology Type, Caving/Noncaving, Color, Hardness, etc...	From (ft.)	To (ft.)
-	-	C	-	Clay	Surface	11
-	-	L	-	Limestone/Dolomite	11	287
-	-	H	-	Shale	287	619
-	-	L	-	Limestone/Dolomite	619	820
-	-	N	-	Sandstone	820	862

6. Casing, Liner, Screen

Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)
6	New black steel plain end welded astm a 53b 18 97# per ft hyundai pipe	Surface	628
Dia. (in.)	Screen type, material & slot size	From (ft.)	To (ft.)

9. Static Water Level
390 ft. below ground surface

10. Pump Test
Pumping level 540 ft. below surface
Pumping at 100 GP M for 2 Hrs.
Pumping Method ?

11. Well Is
24 in. above grade
Developed ? Yes
Disinfected ? Yes
Capped ? Yes

7. Grout or Other Sealing Material
Method Bradenhead

Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
Neat cement grout	Surface	628	228 S

12. Notified Owner of need to fill & seal ?
Filled & Sealed Well(s) as needed? Yes

13. Constructor / Supervisory Driller	Lic #	Date Signed
TLV		04-26-2017
Drill Rig Operator	Lic or Reg #	Date Signed
DS		04-26-2017

4a. Potential Contamination Sources Is the well located in floodplain ? No

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 05-09-2017 Created by: WELL CONST LOAD Updated On: 11-21-2019 Updated by: PARCEL_MATCH

Well Construction Report
WISCONSIN UNIQUE WELL NUMBER **WI869**

Drinking Water and Groundwater - DG/5
Department of Natural Resources, Box 7921
Madison WI 53707
Form 3300-077A

Property Owner: Calf Source	Phone #: (920)864-7828
Mailing Address: 3586 Coopertown	
City: De Pere	State: WI — Zip Code: 54115
County: Brown	Co. Permit #:
Notification #: 25031991	Completed: 01-09-2007
Well Constructor (Business Name): VAN DE YACHT LEO WELL DRILLING INC	Lic. #: 6097
Facility ID # (Public Wells): 405207000	
Well Plan Approval #: 05-3-0034	
Approval Date (mm-dd-yyyy): 01-05-2007	
Address: 2352 LINEVILLE RD, GREEN BAY WI 54313	
Hicap Permanent Well #: 68623	Common Well #:
Specific Capacity: 0.3	
3. Well serves: 1 # of building	
Non-community	
Heat Exchange____# of drillholes	
Hicap Well ?: No	
Hicap Property ?: No	
Hicap Potable ?	

1. Well Location

Town of MORRISON	Fire # (if avail.): 3586
Street Address or Road Name and Number: COOPERSTOWN RD	
Subdivision Name	Lot #	Block #
Latitude / Longitude in Decimal Degree (DD): 44.31683 °N -87.9502 °W	Method Code: GPS006
NE NW or Govt Lot #	Section: 4 — Township: 21 N — Range: 21 E

2. Well Type New Well — YQ807 replaces this well of previous unique well # — constructed in

Reason for replaced or reconstructed well ?

Construction Type: Drilled

4. Potential Contamination Sources - ON REVERSE SIDE

5. Drillhole Dimensions and Construction Method

Dia. (in.)	From (ft.)	To (ft.)
8	Surface	104
6	104	282

Upper Enlarged Drillhole		Lower Open Bedrock
No	Rotary - Mud Circulation	No
Yes	Rotary - Air	Yes
No	Rotary - Air & Foam	No
No	Drill-Through Casing Hammer	
No	Reverse Rotary	
No	Cable-tool Bit ____in. dia...	No
	Dual Rotary	
No	Temp. Outer Casing ____in. dia	
No	Removed? ____depth ft. (If NO explain on back side)	

Geology Codes	8. Geology Type, Caving/Noncaving, Color, Hardness, etc...	From (ft.)	To (ft.)
- - C -	Clay	Surface	5
- - L -	Limestone/Dolomite	5	282

6. Casing, Liner, Screen

Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)
6	New black steel, plain end welded astm,a53b,18.97#per ft.,Wheatland Pipe	Surface	104
Dia. (in.)	Screen type, material & slot size	From (ft.)	To (ft.)

9. Static Water Level
60 ft. below ground surface

10. Pump Test
Pumping level 160 ft. below surface
Pumping at 30 GP M for 2 Hrs.
Pumping Method ?

11. Well Is
12 in. above grade
Developed ? Yes
Disinfected ? Yes
Capped ? Yes

7. Grout or Other Sealing Material
Method: Bradenhead

Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
Neat Cement Grout	Surface	104	21 S

12. Notified Owner of need to fill & seal ?

Filled & Sealed Well(s) as needed? No
na

13. Constructor / Supervisory Driller	Lic #	Date Signed
TLV		01-09-2007
Drill Rig Operator	Lic or Reg #	Date Signed
SC		01-09-2007

4a. Potential Contamination Sources Is the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Manure Hopper or Reception Tank - Liquid Tight		350	Building Overhang		10
			Animal Barn Pen		75

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Abandonment Type	Abandonment Date	Procedure	Reason
Permanent	11/29/2016	BENTONITE CHIPS 0-282' 71 SACKS USED	POOR WATER QUALITY

Created On: 02-20-2007 Created by: WELL CONST LOAD Updated On: 09-26-2017 Updated by: PWS TRANSFER

Well Construction Report
WISCONSIN UNIQUE WELL NUMBER SX684

Drinking Water and Groundwater - DG/5
Department of Natural Resources, Box 7921
Madison WI 53707
Form 3300-077A

Property Owner	CALF SOURCE
Phone #	(920)766-5335
Mailing Address	N3603 VANDEN BOSCH R
City	KAUKAUNA
State	WI
Zip Code	54130-
County	Brown
Co. Permit #	
Notification #	
Completed	06-16-2005

1. Well Location
Town of MORRISON
Fire # (if avail.)
Street Address or Road Name and Number
COOPERSTOWN RD
Subdivision Name | Lot # | Block #

Well Constructor (Business Name)	LUISIER WELL DRILLING INC
Lic. #	157
Facility ID # (Public Wells)	405207000
Well Plan Approval #	5334
Approval Date (mm-dd-yyyy)	06-16-2005
Address	220 MARKS DR OCONTO FALLS WI 54154-1078
Hicap Permanent Well #	67724
Common Well #	3
Specific Capacity	0.3

Latitude / Longitude in Decimal Degree (DD) °N °W
Method Code: GPS008

NW	NW	Section	Township	Range
or Govt Lot #		4	21 N	21 E

2. Well Type New Well — YS692 replaces this well
of previous unique well # — constructed in
Reason for replaced or reconstructed well ?
Construction Type: Drilled

3. Well serves 1 # of CATTLE
Non-community
Heat Exchange____# of drillholes
Hicap Well ? No
Hicap Property ? Yes
Hicap Potable ?

4. Potential Contamination Sources - ON REVERSE SIDE

5. Drillhole Dimensions and Construction Method

Dia. (in.)	From (ft.)	To (ft.)
8.75	Surface	103
6	103	202

Upper Enlarged Drillhole / Lower Open Bedrock

- Yes — Rotary - Mud Circulation ..... — No
- Rotary - Air .....
- No — Rotary - Air & Foam ..... — Yes
- Drill-Through Casing Hammer
- Reverse Rotary
- Cable-tool Bit ____In. dia...
- Dual Rotary .....
- Temp. Outer Casing ____In. dia
  Removed? ____depth ft. (If NO explain on back side)

Geology Codes	8. Geology Type, Caving/Noncaving, Color, Hardness, etc...	From (ft.)	To (ft.)
- - C -	CLAY	Surface	8
- - L -	LIMESTONE	8	202

6. Casing, Liner, Screen

Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)
6	NEW PE 18.97 WHEATLAND A-53	Surface	103
Dia. (in.)	Screen type, material & slot size	From (ft.)	To (ft.)

7. Grout or Other Sealing Material
Method TREMIE PIPE/PUMPED

Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
PORTLAND CEMENT	Surface	103	18 S

9. Static Water Level
30 ft. below ground surface

10. Pump Test
Pumping level 180 ft. below surface
Pumping at 50 GP M for 3 Hrs.
Pumping Method ?

11. Well Is
24 in. above grade
Developed ? Yes
Disinfected ? Yes
Capped ? Yes

12. Notified Owner of need to fill & seal ?
Filled & Sealed Well(s) as needed?

13. Constructor / Supervisory Driller	Lic #	Date Signed
JM		07-29-2005
Drill Rig Operator	Lic or Reg #	Date Signed
GR		06-16-2005

4a. Potential Contamination Sources Is the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		50	Animal Barn Pen		50

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Abandonment Type	Abandonment Date	Procedure	Reason
Permanent	08/09/2017	BENTONITE CHIPS 0-202' 54 BAGS USED	BAD WATER SAMPLES COLIFORM & E COLI

Created On: 09-26-2005 Created by: WELL CONST LOAD Updated On: 09-26-2017 Updated by: PWS TRANSFER

Appendix B: April 16, 2015, Sample Results

Wisconsin Department of Natural Resources
Laboratory Report

Laboratory: Wisconsin State Laboratory of Hygiene
2601 Agriculture Dr
Madison WI 53718
Phone : 800-442-4618 Fax Phone : 608-224-6213
DNR ID 113133790

Sample:

Field #:	S1	Sample #:	188490001
Collection Start:	04/16/2015 03:15 pm	Collection End:	04/16/2015 03:15 pm
Collected by:	CASEY JONES	Waterbody/Outfall Id:	
ID #:		ID Point #:	
County:	Brown	Account #:	WT093
Sample Location:	S1 CALF SOURCE-GROUNDWATER IN TEST PIT		
Sample Description:	GROUNDWATER (MANURE-LADEN) NEXT TO STORAGE		
Sample Source:	Other Waste	Sample Depth:	
Date Reported:	05/04/2015	Sample Status:	COMPLETE
Project No:		Sample Reason:	
Comment:			

Analyses and Results:

Analysis Method	Analysis Date	Lab Comment
EPA 350.1	04/24/2015	

Code	Description	Result	Units	LOD	Report Limit	LOQ
608	NITROGEN NH3-N DISS	133	MG/L	3.00		9.60

Analysis Method	Analysis Date	Lab Comment
EPA 365.1	04/29/2015	

Code	Description	Result	Units	LOD	Report Limit	LOQ
665	PHOSPHORUS TOTAL	46.0	MG/L	0.250		0.800

Analysis Method	Analysis Date	Lab Comment
EPA 351.2	04/24/2015	

Code	Description	Result	Units	LOD	Report Limit	LOQ
625	NITROGEN KJELDAHL TOTAL	182	MG/L	2.75		9.00

Analysis Method	Analysis Date	Lab Comment
ASTM D1252-95B	04/29/2015	

Code	Description	Result	Units	LOD	Report Limit	LOQ
340	COD HI LEVEL	1180	MG/L	17.0		53.8

Analysis Method	Analysis Date	Lab Comment
EPA 353.2	04/24/2015	

Code	Description	Result	Units	LOD	Report Limit	LOQ
631	NITROGEN NO3+NO2 DISS (AS N)	0.770	MG/L	0.0190		0.0610

Analysis Method		Analysis Date	Lab Comment				
SM5210B		**04/18/2015**					
Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*	
310	**BOD 5 DAY**	**172**	MG/L	2.00		2.00	

Laboratory: **Wisconsin State Laboratory of Hygiene** *DNR ID* **113133790**
2601 Agriculture Dr
Madison **WI** **53718**
Phone : **800-442-4618** *Fax Phone :* **608-224-6213**

Sample:

Field #:	**S3**	*Sample #:*	**188490003**
Collection Start:	**04/16/2015 03:30 pm**	*Collection End:*	**04/16/2015 03:30 pm**
Collected by:	**CASEY JONES**	*Waterbody/Outfall Id:*	
ID #:		*ID Point #:*	
County:	**Brown**	*Account #:*	**WT093**
Sample Location:	**S3 CALFSOURCE - GROUNDWATER SEEP**		
Sample Description:	**GROUNDWATER (MANURE-LADEN) FROM BEDROCK**		
Sample Source:	**Other Waste**	*Sample Depth:*	
Date Reported:	**05/04/2015**	*Sample Status:*	**COMPLETE**
Project No:		*Sample Reason:*	
Comment:			

Analyses and Results:

Analysis Method	*Analysis Date*	*Lab Comment*
EPA 353.2	**04/24/2015**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
631	NITROGEN NO3+NO2 DISS (AS N)	**0.211**	MG/L	0.0190		0.0610

Analysis Method	*Analysis Date*	*Lab Comment*
EPA 351.2	**04/24/2015**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
625	NITROGEN KJELDAHL TOTAL	630	MG/L	11.0		36.0

Analysis Method	*Analysis Date*	*Lab Comment*
EPA 365.1	**04/29/2015**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
665	PHOSPHORUS TOTAL	**14.1**	MG/L	0.500		1.60

Analysis Method	*Analysis Date*	*Lab Comment*
SM5210B	**04/18/2015**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
310	BOD 5 DAY	3120	MG/L	2.00		2.00

Analysis Method	*Analysis Date*	*Lab Comment*
EPA 350.1	**04/24/2015**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
608	NITROGEN NH3-N DISS	529	MG/L	15.0		48.0

Analysis Method		Analysis Date	Lab Comment				
ASTM D1252-95B		04/29/2015					
Code	Description	Result	Units	LOD	Report Limit	LOQ
340	COD HI LEVEL	6600	MG/L	212.5		672.5

Appendix C: October 21, 2019, Calf Hutch Runoff Sample Results

Wisconsin Department of Natural Resources
Laboratory Report

Laboratory: **Wisconsin State Laboratory of Hygiene** *DNR ID:* **113133790**
PO Box 7996
Madison **WI** **53718**
Phone : **608-224-6203** *Fax Phone :* **608-224-6213**

Sample:

Field #:	**NA**	*Sample #:*	**477255002**
Collection Start:	**10/21/2019 02:15 pm**	*Collection End:*	**10/21/2019 02:15 pm**
Collected by:	**BENJAMIN UVAAS**	*Waterbody/Outfall Id:*	
ID #:		*ID Point #:*	
County:	**Brown**	*Account #:*	**WW019**
Sample Location:	**PONDED LIQUID ON NE CORNER OF SPREADER BAR**		
Sample Description:	**CS2**		
Sample Source:	**Surface Water**	*Sample Depth:*	
Date Reported:	**11/01/2019**	*Sample Status:*	**CORRECTED**
Project No:		*Sample Reason:*	
Comment:			

Analyses and Results:

Analysis Method	*Analysis Date*	*Lab Comment*
EPA 350.1	**10/31/2019**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
608	NITROGEN NH3-N DISS	**27.5**	MG/L	0.750		2.40

Analysis Method	*Analysis Date*	*Lab Comment*
SM9223BMPN	**10/22/2019**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
98930	E COLI COLILERT 18 HR MPN	**6131000**	/100 ML			10000

Analysis Method	*Analysis Date*	*Lab Comment*
ASTM D1252-06B	**10/31/2019**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
340	COD HI LEVEL	**1700**	MG/L	80.5		268.5

Analysis Method	*Analysis Date*	*Lab Comment*
EPA 351.2	**10/24/2019**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
625	NITROGEN KJELDAHL TOTAL	**114**	MG/L	5.20		17.2

Analysis Method	*Analysis Date*	*Lab Comment*
EPA 353.2	**10/31/2019**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
631	NITROGEN NO3+NO2 DISS (AS N)	**0.170**	MG/L	0.0360		0.120

Analysis Method		Analysis Date	Lab Comment				
EPA 365.1		10/30/2019					
Code	Description	Result	Units	LOD	Report Limit	LOQ
665	PHOSPHORUS TOTAL	13.5	MG/L	0.128		0.432

Appendix D: Analytical Results Summary, Groundwater Seep Sampling, Calf Source LLC

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SEEP SAMPLING
CALF SOURCE, LLC

Location	Sample ID	Date	Ammonia	BOD	COD	Fecal coliform bacteria	Nitrite/ Nitrate	Phosphorus	TKN
		Units	mg/L	mg/L	mg/L	cfu/100mL	mg/L	mg/L	mg/L
SP-1	W-061515-NC-01	6/15/2015	52.4	151	411	103000	0.48 UD3	2.7	79.9
SP-1	W-062215-NC-01	6/22/2015	39.6	86.0	264	16400	0.11 J	1.7	58.0
SP-1	W-062915-AL-01	6/29/2015	39.9	73.1	234	2100	0.095 U	1.6	51.0
SP-1	W-070615-NC-01	7/6/2015	40.4	33.1	283	1000	0.097 J	3.0	66.3
SP-1	W-071315-NC-01	7/13/2015	35.6	26.0	209	454	0.25 U	1.8	49.1
SP-1	W-072015-NC-01	7/20/2015	36.6	20.0 U[5]	191	731	0.095 U	1.6	46.2
SP-1	W-072715-NC-01	7/27/2015	49.0	27.7	261	4800[2]	0.24 J	2.2	73.9
SP-1	W-080315-NC-01	8/3/2015	46.0	23.6	221	21200	0.33	2.6	66.5
SP-1	W-081015-NC-01	8/10/2015	49.8	36.3	337	TNTC	0.40	2.7	70.8
SP-1	W-081715-NC-01	8/17/2015	51.0	16.0	2510	7270	0.095 UM0	2.2	73.7
SP-1	W-082415-NC-01	8/24/2015	58.2	15.3	241	6600	0.095 UM0	2.0	71.0
SP-1	W-083115-NC-01	8/31/2015	80.8	133	567	47000	0.48 UD3	5.9	124
SP-1	W-090815-NC-01	9/8/2015	12.3	49.5	186	TNTC	1.9	1.5	20.7
SP-1	W-091415-NC-01	9/14/2015	55.6	15.0 U[3]	181	1470	0.095 U	1.8	65.7
SP-1	W-092115-NC-01	9/21/2015	52.1	11.8	193	1670	0.095 U	1.7	66.9
SP-1	W-092815-NC-01	9/28/2015	52.4	54.2	253	732	0.79	3.5	69.3
SP-1	W-100515-NC-01	10/5/2015	50.2	20.1 B3	230	428	0.095 U	2.8	65.6
SP-1	W-101215-NC-01	10/12/2015	55.5	16.2	214	1730	0.095 U	2.1	69.1
SP-1	W-101915-NC-01	10/19/2015	54.8	81.4	375	1180	0.12 J	2.4	74.6
SP-1	W-102615-NC-01	10/26/2015	58.1	129 B1	350	7000	1.9	2.8	78.7
SP-1	W-110215-AL-01	11/2/2015	57.0	27.5	243	15500	0.22 J	2.1	68.8
SP-1	W-110915-NC-01	11/9/2015	68.5	37.1	521	TNTC	0.10 J	3.9	104
SP-1	W-111615-NC-01	11/16/2015	63.1	20.9	278	4540	0.095 U	2.6	77.6
SP-1	W-112315-NC-01	11/23/2015	63.8	14.5	306	10300	0.095 U	3.5	75.6
SP-1	W-113015-NC-01	11/30/2015	55.1	11.0	193	244	0.29	2.1	67.8
SP-1	W-120715-NC-01	12/7/2015	48.5	18.6	167	167 U	0.10 JM0	2.7	60.5
SP-1	W-121415-NC-01	12/14/2015	9.0	19.9	75.2	328	5.5	0.87	13.2
SP-1	W-122115-NC-01	12/21/2015	9.5	3.0 U[4]	42.9 J	88.5	16.0	0.070 J	11.5
SP-1	W-122815-NC-01	12/28/2015	3.7	2.0 U	40.5 J	3.2 U	23.5	0.35 J	5.8
SP-1	W-022916-NC-01	2/29/2016	1.5	2.0 UB3	23.2 J	11.8	11.6	0.12 J	2.0
SP-1 (DUP)	W-022916-NC-02	2/29/2016	1.5	2.0 UB3	23.2 J	13.7	11.5	0.12 J	2.3
SP-1	W-051716-NC-01	5/17/2016	0.95	7.7	27.6 J	2.0 U	15.2	0.052 U[8]	2.0
SP-1 (DUP)	W-051716-NC-02	5/17/2016	0.95	7.9	70.1	1	15.3	0.052 U[8]	1.8
SP-1		8/17/2016	Not enough water to collect sample						
SP-1		11/16/2016	Not enough water to collect sample						
SP-1	W-030817-NC-04	3/8/2017	3.4	5.5	42.9 J	500	18.1	0.31 J1q	5.0
SP-1	W-030817-NC-05	3/8/2017	3.4	5.8	40.6 J	590	18.7	0.30 J1q	4.8
SP-1	W-051817-AL-01	5/18/2017	0.25 U	2.0 U	13.4 U	2.0	28.9	0.070 J	0.22 UM0
SP-1 (DUP)	W-051817-AL-05	5/18/2017	0.37 J	2.0 U	18.6 J	1.0 U	28.0	0.068 J	0.22 U
SP-1	W-081617-AL-01	8/16/2017	5.5	28.5	97.9	83000	0.095 U	1.6	11.8
SP-1 (DUP)	W-081617-AL-05	8/16/2017	6.3	27.0	97.9	86000	0.095 U	1.5	11.4
SP-1	W-111517-AL-01	11/15/2017	0.25 U	7.5 U[6]	31.4 J	200	1.8	0.31 J	1.2
SP-1 (DUP)	W-111517-AL-05	11/15/2017	0.25 U	4.7	33.7 J	83.6	1.8	0.34 J	1.3
SP-1	W-052418-NC-01	5/24/2018	1.1	3.6	19.0 J	2.0 U	13.6	0.12 J1q	2.1 M0
SP-1 (DUP)	W-052418-NC-02	5/24/2018	0.97	2.0 U	20.3 J	2.0	13.6	0.12 J	1.8
SP-1		8/15/2018	Not enough water to collect sample						
SP-1	W-111518-BL-01	11/15/2018	0.25 U	2.0 U	28.3 J	4.92	24.8	0.064 J	0.83
SP-1 (DUP)	W-111518-BL-02	11/15/2018	0.25 U	2.0 U	15.4 J	3.28	24.6	0.069 J	1.0
SP-1	W-021319-BL-01	2/13/2019	0.25 U	2.0 U	15.4 J	17.5	10.1	0.12 J	0.69 J
SP-1 (DUP)	W-021319-BL-02	2/13/2019	0.25 U	2.0 U	13.4 U	10.0	10.3	0.10 J	0.71 J
SP-1	W-051519-BL-01	5/15/2019	0.25 U	2.0 U	13.4 U	12.0	10.1	0.052 U1q	0.80 M0
SP-1 (DUP)	W-051519-BL-02	5/15/2019	0.25 U	2.0 U	13.4 U	4.00	10.3	0.052 U1q	0.91
SP-1	W-081419-BL-01	8/14/2019	0.25 U	2.0 U	13.4 U	176	5.0	0.068 J	0.66 J
SP-1 (DUP)	W-081419-BL-02	8/14/2019	0.25 U	2.0 U	13.4 U	184	4.9	0.076 J	0.67 J
SP-1	W-112519-NC-01	11/25/2019	0.67	2.0 U	14.7 U	36.0	10.4	0.068 J1q	0.68 J
SP-1	W-021720-LT-01	2/17/2020	0.14 U	2.0 U	15.5 U	5.88	6.4	0.095 J	0.58 J
SP-1	W-051220-LT-01	5/12/2020	0.40 J	2.0 U	16.1 J	14.5	7.5	0.17 J	0.95 J
SP-1	W-081220-LT-04	08/12/2020	0.14 U	2.3 R6	14.7 U	48.9	6.6	0.075 J	3.7
SP-1		11/10/2020	Not enough water to collect sample						
SP-1		2/15/2021	Ice in well						

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SEEP SAMPLING
CALF SOURCE, LLC

Location	Sample ID	Date	Ammonia	BOD	COD	Fecal coliform bacteria	Nitrite/ Nitrate	Phosphorus	TKN
		Units	mg/L	mg/L	mg/L	cfu/100mL	mg/L	mg/L	mg/L
SP-1	W-051221-LT-01	05/12/2021	0.16 J	2.0 U	14.7 U	42.7	4.6	0.14 JB	0.83 J
SP-2	W-111615-NC-02	11/16/2015	55.2	7.9	133	2000	4.7	36.7	60.7 P6
SP-2	W-022916-NC-03	2/29/2016	41.1	115 B3	354	90.0 U	64.0	11.0	49.3
SP-2		5/17/2016				Not enough water to collect sample			
SP-2	W-081716-NC-02	8/17/2016	28.3	194	256	10100	1.8	23.2	50.6
SP-2	W-111616-NC-01	11/16/2016	12.1	55.0	85.7	9.0 U	3.2	6.6	18.4
SP-2 (DUP)	W-111616-NC-02	11/16/2016	22.3	61.8	197	182	1.3	12.7	27.7
SP-2	W-030817-NC-01	3/8/2017	30.1	600	820	540	15.1	19.0	44.1
SP-2	W-051817-AL-02	5/18/2017	35.8	177	731	5450	22.1	12.3	51.6
SP-2	W-081617-AL-02	8/16/2017	61.7	48.9	387	690000	0.48 UD3	21.0	98.1
SP-2	W-111517-AL-02	11/15/2017	56.0	75.1	292	3640	0.48 UD3	17.0	60.9
SP-2	W-052418-NC-03	5/24/2018	29.7	20.0 U[7]	163	99.1	0.31	5.9	35.4
SP-2	W-081518-BL-01	8/15/2018	57.8	47.6	283	1260	0.90	24.2 M0	65.3
SP-2	W-111518-BL-03	11/15/2018	9.7	38.3 B1	94.9	9.0 U	8.2	1.3	13.8
SP-2		2/13/2019				Not enough water to collect sample			
SP-2	W-051519-BL-04	5/15/2019	687	4220 B1	9420	40000	0.95 UD3	40.7 M0	818
SP-2	W-081419-BL-06	8/14/2019	535	627	2330	1000000	0.95 UD3	33.9	613
SP-2	W-112519-NC-02	11/25/2019	28.8	14.5	147	2300	6.5	8.4	76.3
SP-2 (DUP)	W-112519-NC-04	11/25/2019	42.8	40.0 UB2	201	6670	3.5	11.8	93.6
SP-2		2/17/2020				Not enough water to collect sample			
SP-2		5/12/2020				Not enough water to collect sample			
SP-2	W-081220-LT-01	08/12/2020	5.6	30.4 B1	173	9090 U	0.30 UD3	10.6	11.7
SP-2 (DUP)	W-081220-LT-02	08/12/2020	5.6	46.5	178	1670 U	0.30 UD3	11.1	12.1
SP-2		11/10/2020				No Sample due to pump malfunction			
SP-2		2/15/2021				Not enough water to collect sample			
SP-2	W-051221-LT-02	05/12/2021	15.3	17.1	105	900	11.0	5.6	18.7
SP-3	W-111615-NC-03	11/16/2015	59.6	15.3	167	5300	1.9	46.3 P6	71.7
SP-3	W-022916-NC-04	2/29/2016	34.5	151 B3	492	901 U	26.7	15.7 M0	45.8
SP-3	W-051716-NC-04	5/17/2016	69.4	89.2	627	1800	0.095 U	43.8	92.2
SP-3	W-081716-NC-01	8/17/2016	45.8	106	614	54000	0.095 U	23.6	76.6
SP-3		11/16/2016				Not enough water to collect sample			
SP-3	W-030817-NC-02	3/8/2017	3.7	5.3	103	18.0	59.5	4.9	2.8
SP-3	W-051817-AL-03	5/18/2017	27.5	16.9	238	TNTC[5]	75.5	4.4	32.9
SP-3	W-081617-AL-03	8/16/2017	47.2	56.7	387	270000	0.48 UD3	18.5	75.9
SP-3	W-111517-AL-03	11/15/2017	51.0	19.9	227	18200	0.48 UD3	15.0	56.2
SP-3	W-052418-NC-04	5/24/2018	43.5	216	592	5200	32.9	6.3	57.5
SP-3	W-081518-BL-02	8/15/2018	140	200 UB2	638	180	0.095 U	22.6	159
SP-3	W-081518-BL-03	8/15/2018	121	200 UB2	549	450	0.095 U	21.0	139
SP-3	W-111518-BL-04	11/15/2018	30.5	40.6	138	18.0	3.3	2.2	35.5
SP-3		2/13/2019				Not enough water to collect sample			
SP-3	W-051519-BL-05	5/15/2019	1060	4200 B1	13700	81800	1.9 UD3	73.1	1300
SP-3	W-081419-BL-05	8/14/2019	668	1500	4130	16400	0.95 UD3	44.4	808
SP-3	W-112519-NC-03	11/25/2019	37.4	33.7	320	15000	9.2	12.8	104
SP-3	W-021720-LT-02	2/17/2020	32.7	100 UB2	277	20000	7.4	8.3	38.7
SP-3 (DUP)	W-021720-LT-03	2/17/2020	37.6	111	255	22000	7.1	9.4	46.4
SP-3	W-051220-LT-02	5/12/2020	22.9	41.9	150	364	9.2	5.2	29.2
SP-3 (DUP)	W-051220-LT-03	5/12/2020	14.9	60.0 UB2	122	90.9	11.4	3.9	19.8
SP-3	W-081220-LT-03	08/12/2020	63.2	102	271	3500	7.5	12.0	66.3
SP-3	W-111020-LT-02	11/10/2020	71.5	49.3	266	80.0	4.4	14.4	80.7
SP-3 (DUP)	W-111020-LT-03	11/10/2020	100	93.8	342	60.0	3.6	17.7	113
SP-3		2/15/2021				Not enough water to collect sample			
SP-3	W-051221-LT-03	05/12/2021	123	48.0 R6	832	25.0 U	0.30 UD3	24.0	134
SP-3 (DUP)	W-051221-LT-04	05/12/2021	135	96.8 B1	843	25.0 U	0.30 UD3	23.7	146
SP-4	W-111615-NC-04	11/16/2015	147	17.3	274	2620	0.71	73.4	224
SP-4	W-022916-NC-05	2/29/2016	104	281 B3	720	18000	1.1	28.8	134
SP-4	W-051716-NC-03	5/17/2016	122	33.7	426	901 U	0.095 U	29.1	144
SP-4	W-081716-NC-03	8/17/2016	100	200 UB2	596	1080	0.095 U	62.9	152

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SEEP SAMPLING
CALF SOURCE, LLC

Location	Sample ID	Date	Ammonia	BOD	COD	Fecal coliform bacteria	Nitrite/Nitrate	Phosphorus	TKN
		Units	mg/L	mg/L	mg/L	cfu/100mL	mg/L	mg/L	mg/L
SP-4		11/16/2016				Not enough water to collect sample			
SP-4	W-030817-NC-03	3/8/2017	68.4	358	765	140000	4.2	26.8	108
SP-4	W-051817-AL-04	5/18/2017	93.1	200 U2q	364	68200	14.7	17.5	142
SP-4	W-081617-AL-04	8/16/2017	73.6	177	428	250000	9.7	68.9	133
SP-4	W-111517-AL-04	11/15/2017	69.8	56.6	545	10000	55.9	27.6	90.4
SP-4		8/15/2018				Not enough water to collect sample			
SP-4		11/15/2018				Not enough water to collect sample			
SP-4		2/13/2019				Not enough water to collect sample			
SP-4		5/15/2019				Not enough water to collect sample			
SP-4	W-081419-BL-04	8/14/2019	442	133	1250	74000	4.7	24.4	535
SP-4	W-112519-NC-05	11/25/2019	86.6	37.9	512	39000	0.55 JD3	29.0	227
SP-4		2/17/2020				Not enough water to collect sample			
SP-4		5/12/2020				Not enough water to collect sample			
SP-4		8/12/2020				Not enough water to collect sample			
SP-4		11/10/2020				Not enough water to collect sample			
SP-4		2/15/2021				Not enough water to collect sample			
SP-4		05/12/2021				Not enough water to collect sample			
Field Blank	W-022916-NC-06	2/29/2016	0.80	2.0 UB3	13.4 U	1.0 U	0.095 U	0.052 U	0.50 U
Field Blank	W-051716-NC-05	5/17/2016	0.25 U	2.0 U	13.4 U	1.0 U	4.1	0.052 U1q	0.22 U
Field Blank	W-081716-NC-04	8/17/2016	0.25 U	2.0 U	13.4 U	1.0 U	4.1	0.052 U1q	0.22 U
Field Blank	W-111616-NC-03	11/16/2016	0.37 J	2.0 U	13.4 U	1.0 U	0.095 U	0.052 U	0.22 U
Field Blank	W-030817-NC-06	3/8/2017	0.25 U	-	13.4 U	1.0 U	0.095 U	0.052 U1q	0.22 U
Field Blank	W-051817-AL-06	5/18/2017	0.25 U	2.0 U	13.4 U	1.0 U	0.095 U	0.052 UM0	0.22 U
Field Blank	W-081617-AL-06	8/16/2017	0.51	2.0 U	13.4 U	1.0 U	0.095 U	0.052 U1q	0.22 U
Field Blank	W-111517-AL-06	11/15/2017	0.25 U	2.0 U	13.4 U	1.0 U	0.095 U	0.052 U	0.22 U
Field Blank	W-052418-NC-05	5/24/2018	0.25 U	2.0 U	13.4 U	1.0 U	0.12 J	0.052 U	0.22 U
Field Blank	W-081518-BL-04	8/15/2018	0.25 U	2.0 U	13.4 U	1.0 U	0.095 U	0.052 U1q	0.22 U
Field Blank	W-111518-BL-05	11/15/2018	0.32 J	2.0 U	13.4 U	1.0 U	0.095 U	0.052 U	0.22 U
Field Blank	W-021319-BL-03	2/13/2019	0.25 U	2.0 U	13.4 U	1.11 U	0.095 U	0.052 U	0.22 U
Field Blank	W-051519-BL-03	5/15/2019	0.25 U	2.0 U	13.4 U	2.0 U	0.095 U	0.052 U1q	0.22 U
Field Blank	W-081419-BL-03	8/14/2019	0.51	2.0 U	13.4 U	2.0 U	0.095 U	0.052 U	0.22 U
Field Blank	W-021720-LT-04	2/17/2020	0.14 U	2.0 U	15.5 U	1.0 U	6.2	0.052 J	0.21 U
Field Blank	W-051220-LT-04	5/12/2020	0.14 U	2.0 U	14.7 U	1.8 U	0.059 U	0.029 U	0.21 U
Field Blank	W-081220-LT-05	08/12/2020	0.14 U	2.0 U	14.7 U	1.0 U	0.059 U	0.029 U	0.21 U
Field Blank	W-111020-LT-04	11/10/2020	0.14 U	2.0 U	14.7 U	1.1 UT3	6.1	0.080 JB	0.21 U
Field Blank	W-051221-LT-05	05/12/2021	0.14 U	2.0 U	14.7 U	1.0 U	0.059 U	0.051 JB	0.21 U

Notes:

BOD - Biochemcial Oxygen Demand
COD - Chemical Oxygen Demand
TDS - Total Dissolved Solids
TKN - Total Kjeldahl Nitrogen
mg/L - milligrams per liter
cfu/100mL - colony forming units per 100 milliliters
U - Not detected at the associated reporting limit.
J - Estimated value
D3 - Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
B1 - Less than 1.0 mg/L DO remained for all dilutions set. The reported value is an estimated greater than value and is calculated for the dilution using the least amount of sample.
B2 - Oxygen usage is less than 2.0 for all dilutions set. The reported value is an estimated less than value and is calculated for the dilution using the most amount of sample.
B3 - The dissolved oxygen depletion of the dilution water blank exceeded 0.2 mg/L.
P6 - Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
1q - Analyte was measured in the associated method blank.
2q - BOD result is 194 mg/L. This result is less than the reporting limit multiplied by the dilution factor.
D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
R6 The RPD between valid sample dilutions exceeded 30%.

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SEEP SAMPLING
CALF SOURCE, LLC

Location	Sample ID	Date	Ammonia	BOD	COD	Fecal coliform bacteria	Nitrite/ Nitrate	Phosphorus	TKN
		Units	mg/L	mg/L	mg/L	cfu/100mL	mg/L	mg/L	mg/L

T3 - Insufficient sample received from client to perform the analysis per EPA method requirements.
[1] - BOD result is 17.6 mg/L. This result is less than the reporting limit multiplied by the dilution factor.
[2] Sample and Duplicate failed SM 9222D duplicate criteria. Unable to reanalyzed as a result of sample having exceeded hold time.
[3] - BOD result is 9.5 mg/L. This result is less than the reporting limit multiplied by the dilution factor.
[4] - BOD result is 2.18 mg/L. This result is less than the reporting limit multiplied by the dilution factor.
[5] - All plates were overgrown and too numerous to count. The highest dilution performed was at a rate of 1/100.
[6] - The BOD result is 4.56 mg/L. This is less than the dilution multiplied by the reporting limit.
[7] - BOD result is 18.5 mg/L. This result is less than the reporting limit multiplied by the dilution factor.
[8] - Analyte was measured in the associated method blank at a concentration of -0.076 mg/L.
TNTC - Too numerous to count (CFU's were grown together and too numerous to count on all plates.)
There was not enough water in the SPs to collect a field duplicate during the 8/17/2016 Quarterly Sampling Event.
On 2/13/2018 no water was present at any sample locations. No samples collected.

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Oshkosh Service Center
625 East County Road Y, STE 700
Oshkosh, WI 54901-9731

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

September 24, 2021

WPDES Permit No. WI-0061697-04
Brown County

Todd Willer
Calf Source LLC
N3569 Vanden Bosch Rd
Kaukauna, WI 54130

Subject: August 26, 2021 Inspection Report

Dear Mr. Willer:

Enclosed is a copy of the department's report from the inspection conducted at Calf Source on August 26, 2021. Please review this report carefully.

Also enclosed is a copy of an August 10, 2021 memo from Joe Baeten titled, "Calf Source LLC – Assessment of groundwater quality, potential contaminate sources and need for groundwater monitoring at the production site." The memo will be used when drafting Calf Source's next WPDES permit. Contact me if you have initial questions regarding the memo or would like to schedule a meeting to discuss it.

Sincerely,

Ben Uvaas
CAFO Compliance/Enforcement Coordinator
Phone: (920) 273-5543
Benjamin.uvaas@wisconsin.gov

Enc: August 26, 2021 Inspection Report
August 10, 2021 Calf Source Memo

cc: Chris Clayton, Joe Baeten, Duncan Moss, Holly Stegemann - DNR
Jen Keuning - GHD
Brown County Land & Water Conservation Department

CAFO Compliance Report

Inspection Date: August 26, 2021

Operation Name: Calf Source, LLC

WPDES Permit No: WI-0061697-04-0

Operation Address: 3586 Cooperstown Rd, De Pere, WI 54115

On-Site Representative: Sarah Babcock (Milk Source)

DNR Report Author: Ben Uvaas, CAFO Program Enforcement Coordinator

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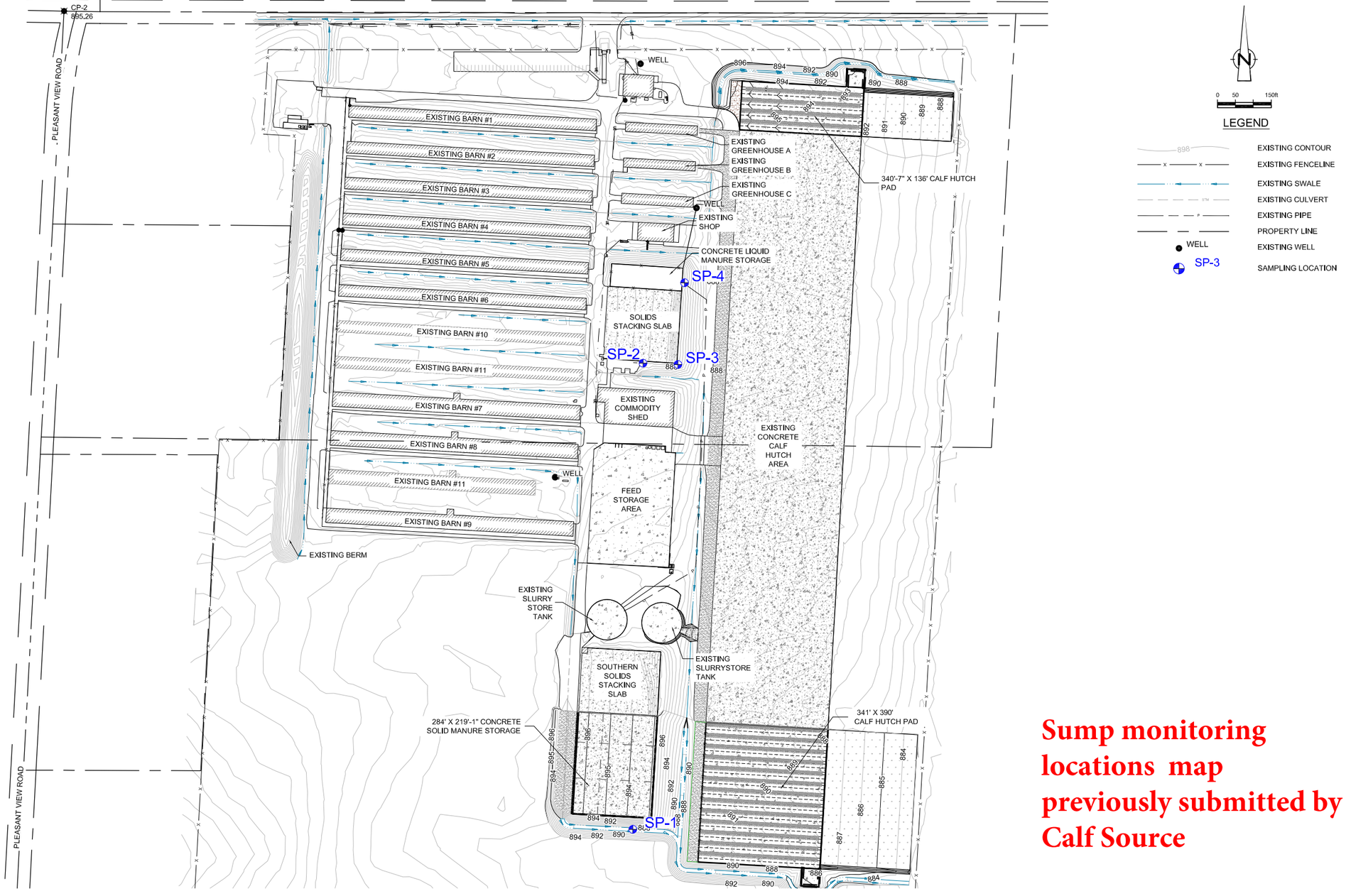
INTRODUCTION

This inspection was scheduled and conducted in as part of the permit reissuance process. Ben Uvaas and Ian Anderson (DNR Hydrogeologist) met Sarah at the site at about 9AM. Discussion and an inspection of the farm's production area followed. DNR staff left the site around 3:30PM. No precipitation fell during or immediately prior to the inspection.

A site map and site observations are included in the report narrative and a photograph log are attached. The summary section at the end describes any areas of concern or noncompliance and next steps if any.

SITE MAPS



Sump monitoring locations map previously submitted by Calf Source

FIGURE 1

SAMPLE LOCATIONS
CALF SOURCE, LLC
BROWN COUNTY, WISCONSIN

SITE OBSERVATIONS

Feedlot Runoff

There are no feedlots at Calf Source. Goats are housed in freestall barns. Calves are housed in three sided barns and hutches.

Calf Hutch Areas

Calves are housed in hutches on a large concrete pad along the site's eastern edge. Individual hutches are bedded in straw with a small area outside the hutch accessible for the calf.

Runoff from the pad flows east through a spreader bar to a vegetated treatment area (VTA). There is no runoff collection as part of this system. The VTA was densely vegetated and had recently been mowed. It didn't appear that grass clippings had been removed from the VTA after mowing, but the VTA appeared to be regularly mowed. No liquid appeared to be entering or exiting the VTA during this dry weather inspection.

Calf hutch area runoff controls were the subject of evaluations and a wet weather inspection during the current permit term. Associated issues were largely unresolved by these actions, with the department and Calf Source's consultant disagreeing on modeling and wet weather inspection outcomes.

Waste Storage Facilities

The majority of waste generated by Calf Source is solid. Prior to its land application, solid manure is stored on a stacking pad near the southern edge of the site. Sarah explained that all material on the pad is kept about a payloader's width away from stacking pad walls. She continued that the practice is used to minimize the amount of pressure put on the joint between the pad's vertical walls and floor. Runoff is collected by sumps in the pad's downgradient corners and transferred to waste storage.

The solid manure stacking pad adjacent to the concrete liquid manure storage has been repurposed to store feed exclusively. Sarah explained that feed is not stored against the vertical walls to minimize pressure on the wall/floor joint. Runoff is collected by sumps in the pad's downgradient corners and transferred to waste storage.

Liquid manure is stored in an HPDE lined concrete waste storage facility and two above ground slurry store structures. Necessary permanent markers are in place, and no storage structures had evidence of waste exceeding those markers.

Process Wastewater (other than feed storage area leachate/runoff)

Process wastewater from mixing calf milk replacer is transferred to the concrete waste storage facility. Mixing occurs in the building just north of former "Greenhouse" style barns.

Feed Storage Area (FSA) Runoff

Feed is stored in two areas. These include the former solid manure stacking pad (described above) and the feed storage area to its south. The south feed storage area has an engineered runoff control system. All runoff flows to the pad's southeast corner, where some runoff is collected and transferred to waste storage. Remaining runoff would overflow the system and enter the site's stormwater drainage swales. Just downgradient of the existing collection system vegetation appeared bent by flowing water bypassing the runoff collection system.

Submittal of an engineering evaluation of these runoff controls was required by the current permit. The evaluation determined that runoff control upgrades were required to meet permit terms and conditions. The department rejected plans and specifications as incomplete for those upgrades twice; September 25, 2020 and June 18, 2021. A third set of plans were received by the department August 2, 2021 and are under review.

Groundwater Monitoring Sumps

Calf Source has four groundwater monitoring sumps at the production area. They were installed during the previous permit term in response to observed poor groundwater quality. The permit requires quarterly water quality monitoring from these sumps. SP-4 has a collection system connected to power that can transfer liquid to the concrete liquid manure storage. SP-3 and SP-2 have collections systems, that when connected to power, would transfer like to the north feed storage area collection system. SP-1 does not have a dedicated pumping system.

Animal Mortality Disposal

Animal mortalities are collected by a service. Mortalities are stored in a shed near the feed storage area prior to pickup.

Ancillary Service Areas

Stormwater runoff moves across the site from west to east. It's concentrated into north and south swales that flow past the calf hutch pad and VTA. Ponded liquid in the south stormwater swale was stained dark, possibly by contact with feed storage area runoff.

SUMMARY

Areas of Concern or Noncompliance

1. Calf hutch area runoff controls are a discharge concern, as described above.
2. Feed storage area runoff controls are a discharge concern. Prior wet weather inspections observed from the south stormwater swale (which receives the uncollected portion of feed storage area runoff) reaching navigable waters. The engineering evaluation agreed that upgrades are necessary. The permit contains a schedule to permanently address this, however, Calf Source is far behind permit due dates. Next steps will be determined by the department's review of the plan and specification package in-house.
3. Sump water quality monitoring results raise groundwater quality concerns. An explanation of the department's concerns and proposed next steps are contained in a memo dated August 10, 2021 by Joe Baeten.

Photo #:	5756
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: Calf Barn 1, a three-sided barn with an open face for drive by feeding. Note, roof extends over feed lane.

Photo #:	5768
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: Overview of calf hutch area, facing east

Photo #:	5795
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: Calf hutch area, facing east

Photo #:	5798
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: Overview of calf hutch area, facing west

Photo #:	5800
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: Calf hutch area runoff controls and VTA at its spreader bar

Photo #:	5803
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: VTA near its southeast corner

Photo #:	5807
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: Solid manure storage, facing south

Photo #:	5808
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: Solid manure storage, facing west

Photo #:	5781
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: West Slurrystore structure

Photo #:	5760
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: HPDE lined concrete waste storage structure, markers at red arrow

Photo #:	5759
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: North feed storage area (photo background)

Photo #:	5767
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: North feed storage area runoff collection, red arrow at its southeast collection sump

Photo #:	5765
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: North feed storage area northeast runoff collection sump utilizing portable pump and transfer line

Photo #:	5766
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: Close-up transfer line in Photo 5765 and its outlet to the concrete liquid manure storage

Photo #:	5776
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: South feed storage area and upright bins

Photo #:	5810
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: South feed storage area

Photo #:	5811
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: South feed storage area from its southeast corner and runoff control system

Photo #:	5813
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: South feed storage area runoff control system, stormwater swale at blue arrows

Photo #:	5823
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: SP-4 and its transfer system

Photo Description: SP-3 (foreground) and SP-2 at red arrow.

Photo #:	5769
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo #:	5771
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: View inside SP-3

Photo #:	5789
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: View inside SP-1

Photo #:	5805
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: South stormwater swale near calf hutch pad's southern border

Photo #:	5806
Date/Time of Photo:	8-26-21 / AM
Photo Location:	Calf Source
Photo By:	Uvaas

Photo Description: Close-up of liquid in photo 5805

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Oshkosh Service Center
625 East County Road Y, STE 700
Oshkosh, WI 54901-9731

Tony Evers, Governor
Preston D. Cole, Secretary
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November 19, 2021

WPDES Permit No. WI-0061697-04
Brown County

Todd Willer
Calf Source LLC
N3569 Vanden Bosch Rd
Kaukauna, WI 54130

Subject: **Notice of Noncompliance – Failure to Adhere to Permit Schedule**

Dear Mr. Willer:

The department believes that Calf Source LLC is in noncompliance with its Wisconsin Pollution Discharge Elimination System Permit (WPDES) permit. Reviewing permit requirements, the department believes your operation has not complied with the following permit conditions:

Permit Section 2.5 Runoff Control System – Engineering Evaluation
Calf Hutch Pad and Vegetated Treatment Area

Required Action	Due Date
Written Description of Existing System: Submit a written description of the existing runoff control system and its adequacy to permanently meet the conditions in the Production Area Discharge Limitations and Runoff Control subsections and s. NR 243.15, Wis. Adm. Code. (See Standard Requirements for report details.)	04/01/2018
Plans and Specifications: Submit plans and specifications for Department review and approval to permanently correct any adverse runoff control conditions in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code.	09/01/2018
Corrections and Post Construction Documentation: Complete construction of runoff controls that permanently correct any adverse runoff control conditions in concurrence with and approval by the Department, by the specified Date Due. Submit post construction documentation within 60 days of completion of the project.	09/01/2019

Multiple engineering evaluation submittals for department review were received starting on March 30, 2018. A wet weather inspection was also conducted on 10/21/2019 to observe calf hutch area runoff control performance during wet weather. The department could not accept evaluation conclusions that the current system meets production area discharge limitations of s. NR 243.13. Significantly different technical opinions remain. The department most recently requested additional action in the letter dated 8/14/2020. No additional actions have occurred since.

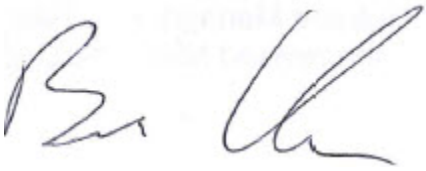
Permit Section 2.4 Feed Storage – Engineering Evaluation

Required Action	Due Date
Plans and Specifications: Submit plans and specifications for Department review and approval to permanently correct any adverse conditions identified as part of the engineering evaluation for the feed storage area in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code.	09/01/2018
Corrections and Post Construction Documentation: Complete construction of improvements to permanently correct any adverse conditions in concurrence with and approval by the Department, by the specified Date Due. Submit post construction documentation within 60 days of completion of the project.	09/01/2019

After the engineering evaluation and inspection determined that plans and specifications were necessary to correct adverse conditions, the department received the first set of plans and specifications on 9/8/2020. Upon review, they were rejected by the department as incomplete for not including the minimum information needed to determine compliance with s. NR 243.15. Importantly, the submitted plans did not demonstrate how the design complies with the production area discharge limitations of s. NR 243.13. The rejection letter was dated 9/25/2020. The department received a second set of plans and specifications on 8/2/2021 with additional information provided 10/18/2021. Plans were rejected in a letter dated 10/29/2021 because they did not demonstrate that the proposed runoff control system was designed to comply with the production area discharge limitations of s. NR 243.13.

Calf Source's WPDES permit expired 9/30/2021. The department is reviewing permit application materials and intends to reissue Calf Source's WPDES permit without delay. The proposed permit will include requirements similar to the current permit's "2.4 Feed Storage – Engineering Evaluation" and "2.5 Runoff Control System – Engineering Evaluation" unless the situation is resolved prior to reissuance. Failure to address these issues, or adhere to the proposed permit's schedule for resolving them, may result in escalated enforcement actions.

Please contact me if you have any questions.
Sincerely,



Ben Uvaas
CAFO Compliance/Enforcement Coordinator
Phone: (920) 273-5543
Benjamin.uvaas@wisconsin.gov

Enc:
cc: Joe Baeten, Holly Stegemann, Chris Clayton, Bernie Michaud, Jeff Kreider, Tyler Dix - DNR
Jen Keuning, Doug Gatrell - GHD
Brown County Land & Water Conservation Department

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November 23, 2021

FILE REF: R-2021-0082
WPDES Permit #: WI-0061697

Todd Willer
Calf Source LLC
N3569 Vanden Bosch Road
Kaukauna, WI 54130

Subject: Days of Storage Review for Calf Source LLC, NW¼ of NW¼ of T21N, R21E, Section 04 in Morrison Township, Brown County – NO ADDITIONAL ACTION REQUIRED

Dear Mr. Willer:

This letter is to inform you that the Wisconsin Department of Natural Resources (Department) has completed its review of the calculation of days of storage submitted under certification by Jen Keuning, GHD on March 30, 2021 with revisions received on November 12, 2021 on behalf of Calf Source LLC.

The Department reviewed the submitted calculations in accordance with ss. NR 243.14(9) and NR 243.15(3)(i) to (k), Wis. Adm. Code. Under s. NR 243.17(3)(c), Wis. Adm. Code, the permittee shall demonstrate compliance with the 180-day design storage capacity requirement at specified times. For the following liquid manure storage calculations, the Department has determined **no additional actions** on your part are required.

Days of Available Liquid Waste Storage: The submitted information states that Calf Source LLC has 189 days of liquid waste storage based on the volumes listed in the table below with respect to s. NR 243.15(3)(i) to (k), Wis. Adm. Code. The current number of animal units provided for the calculation is 3,000. The liquid waste volumes are based on manure hauling logs and a collection period of 365 days. The 25yr – 24hr runoff from the solid stacking areas on site are held within the stacking area walls itself. The stacking area runoff is regularly dewatered and pumped to permanent liquid storage. Runoff in excess of the first 0.35" flush from the calf hutch area is transferred to the existing grass swale on site.

Total Liquid Waste Storage:	4,710,260 gallons
Total Solids Storage	0 gallons
Total 25-yr, 24-hr Precip. on Storage	96,109 gallons
Total 25-yr, 24-hr Collected Runoff	0 gallons
Total Freeboard Vol.	244,626 gallons
Total MOL Liquid Waste Storage:	**4,369,525 gallons**

Based on hauling log data:

Year	Gallons Applied	Avg. Yearly AUs	Gallons/AU
2020	7,512,296	2,582	2,909
2019	7,831,740	2,399	3,265
2018	6,050,000	2,351	2,573
2017	6,278,984	2,536	2,476
2016	6,550,613	2,250	2,911
Average Volume/AU			2,827
Average Annual Volume for Current AUs			**8,480,861**

Should you have any questions, please contact Tony Salituro, DNR Madison office or your regional CAFO Specialist.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to WIS. STAT. §§ 227.52 and 227.53, you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to WIS. STAT. § 227.42, you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with WIS. ADMIN. CODE § NR 2.05(5), and served on the Secretary in accordance with WIS. ADMIN. CODE § NR 2.03. The filing of a request for a contested case hearing does not extend the 30-day period for filing a petition for judicial review.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

Bernie Michaud, P.E.
CAFO Engineer Supervisor
Watershed Management Program

Tony Salituro, E.I.T.
Water Resource Management Specialist
Watershed Management Program

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Holly Stegemann; DNR-Northeast Region
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Toll Free 1-888-936-7463
TTY Access via relay - 711

June 24, 2022

Todd Willer
Calf Source LLC
3586 Cooperstown Road
DePere, WI 54115

Subject: Conditional Approval of Plans & Specifications for a Groundwater Monitoring Plan at Calf Source LLC in Town of Morrison, Brown County

Dear Mr. Willer:

This letter is to inform you that the Wisconsin Department of Natural Resources (department) has reviewed and conditionally approves the above referenced plans and specifications, submitted by Douglas Gatrell, P.E., GHD, Inc. on March 15, 2022, and modified on June 7, 2022. The review was conducted in accordance with s. 281.41, Wis. Stat., and NR 243, NR 140 and NR 141 Wis. Adm. Code. Questions may be directed to the assigned regional staff, or the reviewing hydrogeologist Ian Anderson (contact info is at the end of this letter).

Project Purpose:
The proposed project is a groundwater monitoring system and plan to monitor groundwater conditions at the production area of the facility. The approved plan will be included in the re-issued permit as a permit schedule item.

Summary of the Proposal:
The groundwater monitoring well system is proposed to consist of four groundwater monitoring wells. MW-1 is proposed to be located in the northwest corner of the site, which is presumed to be upgradient, based on the county water table map. MW-2 is proposed to be located in the northeast corner of the site, upgradient of the Vegetated Treatment Area (VTA). MW-3 is proposed to be located in the southeast corner of the site, downgradient of the VTA. MW-4 is proposed to be located in the north-central area of the site, immediately downgradient of the north waste storage facility (which has recently been converted to feed storage), near where the groundwater sumps are currently located. The approved locations are described in the revised Monitoring Plan submitted on June 7, 2022 via email from Jennifer Keuning, GHD Inc.

Wells will be sampled for four field parameters, including water elevations, and grab samples will be collected from each well monthly for the first twelve months after construction, and quarterly thereafter. If data warrant a modification to the sampling schedule, this will be reflected in the Phase 2 Monitoring Plan. Samples will be analyzed for eight chemical parameters, which are described in the original Monitoring Plan proposal received March 15, 2022. Parameters and the sampling schedule will be included in the next permit.

Conditions of the Approval:
The plans and specifications for project number R-2022-0065 are hereby approved and subject to ch. NR 243. Wis. Adm. Code, and the conditions listed below:

1. Revisions: If revisions are made to the approved plans and specifications, revised plans and specifications shall be submitted for approval modification, in accordance with ss. NR 108.03 and NR 108.04, Wis. Adm. Code, and s. 281.41(1)(c), Wis. Stats. Submit revised plans and specifications via the Department's

e-Permitting System. Note: This includes revisions for local permitting. If a formal approval modification may not be warranted, contact the review engineer to confirm.

2. Approval Period: In accordance with ss. NR 243.15(1)(a)1., and NR 108.04(2)d., Wis. Adm. Code, if construction is not commenced within 2 years from the approval date, the approval is void, and a new approval must be obtained prior to commencing construction.
3. Notification: Prior to construction and when construction is complete, notify the department's contact and county contact provided at the end of this letter.
4. Inspection: During the construction of critical components, inspection shall be performed by a Wisconsin registered professional engineer or other qualified third party (excludes the owner and construction contractor and their employees).
5. Post-Construction Documentation: In accordance with the permit, a post-construction report must be submitted to the DNR's e-permitting website (https://dnr.wi.gov/permits/water) within 60 days of completing construction. The report must include documentation specified by s. NR 243.15(10), Wis. Adm. Code, and an as-built site map in accordance with s. NR 141.065, Wis. Adm. Code. For each new groundwater monitoring well, complete one of each of the following DNR forms:
    i. DNR Form 4400-113A (Rev. 7-98) "Monitoring Well Construction."
    ii. DNR Form 4400-113B (Rev. 7-98) "Monitoring Well Development."
    iii. DNR Form 4400-122 (Rev. 7-98) "Soil Boring Log Information."
    iv. DNR Form 4400-67 (Rev. 9-95) "Groundwater Monitoring Inventory."
    v. DNR Form 4400-89 (Rev. 7-89) "Groundwater Monitoring Well Information."
    vi. DNR Form 3300-005 (Rev. 4-08) "Well/Drillhole/Borehole Filling and Sealing" for any drill holes that cannot be developed and must be filled and sealed. This includes the existing sumps, which are proposed to be abandoned in the Monitoring Plan.

Limitation of Approval: The Department reserves the right to order changes or additions should conditions arise making this necessary. This approval is not to be construed as a determination on the issuance of a Wisconsin Pollutant Discharge Elimination System Permit or opinion as to the ability of the proposed system to comply with effluent limitations in such a permit, approval of an Environmental Impact Statement that may be prepared, or approval for any activities requiring a permit under chs. 30 or 31, Wis. Stats. Where necessary, plans and specifications should be submitted to the Department of Safety and Professional Services or other state or local agencies to ensure conformance with applicable codes or regulations of such agencies.

Tax Treatment: Tangible personal property, that becomes part of a waste treatment of pollution abatement plant or equipment, may be exempt from sales tax under s. 77.45(26), Wis. Stats. Similarly, property purchased or constructed as a waste treatment facility and used for industrial waste treatment may be exempt from general property taxes under s. 70.11(21), Wis. Stats. A prerequisite to exemption is filing a statement on prescribed forms. To obtain the forms, and information about this sales tax exemption, please contact the Department of Revenue, P.O. Box 8933, Madison, WI 53708, or check their website http://www.revenue.wi.gov/.

NOTICE OF APPEAL RIGHTS

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STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

Bernie Michaud, P.E.
CAFO Engineering Supervisor
Watershed Management Program

Ian Anderson
CAFO Hydrogeologist
Watershed Management Program

email:

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Calf Source LLC
(920) 766-5335; twiller@milksource.net

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Mike Mushinski; County Conservationist
Brown County
(920) 391-4621;
Michael.mushinski@browncountywi.gov

Ben Uvaas – CAFO Enforcement Program Coordinator
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(920) 273-5543; benjamin.uvaas@wisconsin.gov

Chris Clayton – Ag Runoff Section Chief
DNR, Central Office
(608) 267-7656; christopherr.clayton@wisconsin.gov

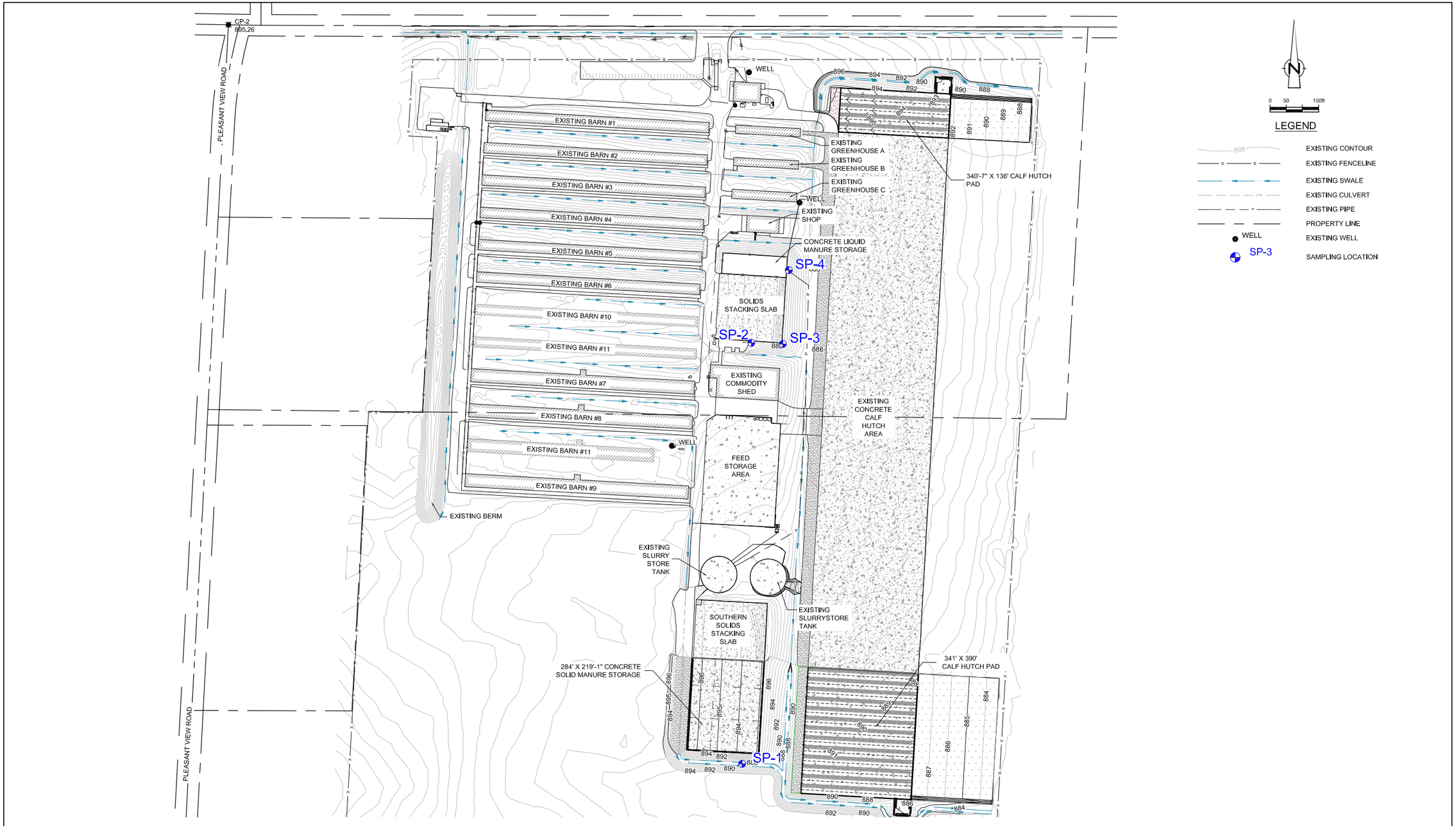

FIGURE 1

SAMPLE LOCATIONS
CALF SOURCE, LLC
BROWN COUNTY, WISCONSIN

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SEEP SAMPLING
CALF SOURCE, LLC

Location	Sample ID	Date	Ammonia	BOD	COD	Fecal coliform bacteria	Nitrite/Nitrate	Phosphorus	TKN
		Units	mg/L	mg/L	mg/L	cfu/100mL	mg/L	mg/L	mg/L
SP-1	W-061515-NC-01	6/15/2015	52.4	151	411	103000	0.48 UD3	2.7	79.9
SP-1	W-062215-NC-01	6/22/2015	39.6	86.0	264	16400	0.11 J	1.7	58.0
SP-1	W-062915-AL-01	6/29/2015	39.9	73.1	234	2100	0.095 U	1.6	51.0
SP-1	W-070615-NC-01	7/6/2015	40.4	33.1	283	1000	0.097 J	3.0	66.3
SP-1	W-071315-NC-01	7/13/2015	35.6	26.0	209	454	0.25 U	1.8	49.1
SP-1	W-072015-NC-01	7/20/2015	36.6	20.0 U[1]	191	731	0.095 U	1.6	46.2
SP-1	W-072715-NC-01	7/27/2015	49.0	27.7	261	4800[2]	0.24 J	2.2	73.9
SP-1	W-080315-NC-01	8/3/2015	46.0	23.6	221	21200	0.33	2.6	66.5
SP-1	W-081015-NC-01	8/10/2015	49.8	36.3	337	TNTC	0.40	2.7	70.8
SP-1	W-081715-NC-01	8/17/2015	51.0	16.0	2510	7270	0.095 UM0	2.2	73.7
SP-1	W-082415-NC-01	8/24/2015	58.2	15.3	241	6600	0.095 UM0	2.0	71.0
SP-1	W-083115-NC-01	8/31/2015	80.8	133	567	47000	0.48 UD3	5.9	124
SP-1	W-090815-NC-01	9/8/2015	12.3	49.5	186	TNTC	1.9	1.5	20.7
SP-1	W-091415-NC-01	9/14/2015	55.6	15.0 U[3]	181	1470	0.095 U	1.8	65.7
SP-1	W-092115-NC-01	9/21/2015	52.1	11.8	193	1670	0.095 U	1.7	66.9
SP-1	W-092815-NC-01	9/28/2015	52.4	54.2	253	732	0.79	3.5	69.3
SP-1	W-100515-NC-01	10/5/2015	50.2	20.1 B3	230	428	0.095 U	2.8	65.6
SP-1	W-101215-NC-01	10/12/2015	55.5	16.2	214	1730	0.095 U	2.1	69.1
SP-1	W-101915-NC-01	10/19/2015	54.8	81.4	375	1180	0.12 J	2.4	74.6
SP-1	W-102615-NC-01	10/26/2015	58.1	129 B1	350	7000	1.9	2.8	78.7
SP-1	W-110215-AL-01	11/2/2015	57.0	27.5	243	15500	0.22 J	2.1	68.8
SP-1	W-110915-NC-01	11/9/2015	68.5	37.1	521	TNTC	0.10 J	3.9	104
SP-1	W-111615-NC-01	11/16/2015	63.1	20.9	278	4540	0.095 U	2.6	77.6
SP-1	W-112315-NC-01	11/23/2015	63.8	14.5	306	10300	0.095 U	3.5	75.6
SP-1	W-113015-NC-01	11/30/2015	55.1	11.0	193	244	0.29	2.1	67.8
SP-1	W-120715-NC-01	12/7/2015	48.5	18.6	167	167 U	0.10 JM0	2.7	60.5
SP-1	W-121415-NC-01	12/14/2015	9.0	19.9	75.2	328	5.5	0.87	13.2
SP-1	W-122115-NC-01	12/21/2015	9.5	3.0 U[4]	42.9 J	88.5	16.0	0.070 J	11.5
SP-1	W-122815-NC-01	12/28/2015	3.7	2.0 U	40.5 J	3.2 U	23.5	0.35 J	5.8
SP-1	W-022916-NC-01	2/29/2016	1.5	2.0 UB3	23.2 J	11.8	11.6	0.12 J	2.0
SP-1 (DUP)	W-022916-NC-02	2/29/2016	1.5	2.0 UB3	23.2 J	13.7	11.5	0.12 J	2.3
SP-1	W-051716-NC-01	5/17/2016	0.95	7.7	27.6 J	2.0 U	15.2	0.052 U[8]	2.0
SP-1 (DUP)	W-051716-NC-02	5/17/2016	0.95	7.9	70.1	1	15.3	0.052 U[8]	1.8
SP-1		8/17/2016	Not enough water to collect sample						
SP-1		11/16/2016	Not enough water to collect sample						
SP-1	W-030817-NC-04	3/8/2017	3.4	5.5	42.9 J	500	18.1	0.31 J1q	5.0
SP-1	W-030817-NC-05	3/8/2017	3.4	5.8	40.6 J	590	18.7	0.30 J1q	4.8
SP-1	W-051817-AL-01	5/18/2017	0.25 U	2.0 U	13.4 U	2.0	28.9	0.070 J	0.22 UM0
SP-1 (DUP)	W-051817-AL-05	5/18/2017	0.37 J	2.0 U	18.6 J	1.0 U	28.0	0.068 J	0.22 U
SP-1	W-081617-AL-01	8/16/2017	5.5	28.5	97.9	83000	0.095 U	1.6	11.8
SP-1 (DUP)	W-081617-AL-05	8/16/2017	6.3	27.0	97.9	86000	0.095 U	1.5	11.4
SP-1	W-111517-AL-01	11/15/2017	0.25 U	7.5 U[6]	31.4 J	200	1.8	0.31 J	1.2
SP-1 (DUP)	W-111517-AL-05	11/15/2017	0.25 U	4.7	33.7 J	83.6	1.8	0.34 J	1.3
SP-1	W-052418-NC-01	5/24/2018	1.1	3.6	19.0 J	2.0 U	13.6	0.12 J1q	2.1 M0
SP-1 (DUP)	W-052418-NC-02	5/24/2018	0.97	2.0 U	20.3 J	2.0	13.6	0.12 J	1.8
SP-1		8/15/2018	Not enough water to collect sample						
SP-1	W-111518-BL-01	11/15/2018	0.25 U	2.0 U	28.3 J	4.92	24.8	0.064 J	0.83
SP-1 (DUP)	W-111518-BL-02	11/15/2018	0.25 U	2.0 U	15.4 J	3.28	24.6	0.069 J	1.0
SP-1	W-021319-BL-01	2/13/2019	0.25 U	2.0 U	15.4 J	17.5	10.1	0.12 J	0.69 J
SP-1 (DUP)	W-021319-BL-02	2/13/2019	0.25 U	2.0 U	13.4 U	10.0	10.3	0.10 J	0.71 J
SP-1	W-051519-BL-01	5/15/2019	0.25 U	2.0 U	13.4 U	12.0	10.1	0.052 U1q	0.80 M0
SP-1 (DUP)	W-051519-BL-02	5/15/2019	0.25 U	2.0 U	13.4 U	4.00	10.3	0.052 U1q	0.91
SP-1	W-081419-BL-01	8/14/2019	0.25 U	2.0 U	13.4 U	176	5.0	0.068 J	0.66 J
SP-1 (DUP)	W-081419-BL-02	8/14/2019	0.25 U	2.0 U	13.4 U	184	4.9	0.076 J	0.67 J
SP-1	W-112519-NC-01	11/25/2019	0.67	2.0 U	14.7 U	36.0	10.4	0.068 J1q	0.68 J
SP-1	W-021720-LT-01	2/17/2020	0.14 U	2.0 U	15.5 U	5.88	6.4	0.095 J	0.58 J
SP-1	W-051220-LT-01	5/12/2020	0.40 J	2.0 U	16.1 J	14.5	7.5	0.17 J	0.95 J
SP-1	W-081220-LT-04	08/12/2020	0.14 U	2.3 R6	14.7 U	48.9	6.6	0.075 J	3.7
SP-1		11/10/2020	Not enough water to collect sample						
SP-1		2/15/2021	Ice in well						
SP-1	W-051221-LT-01	05/12/2021	0.16 J	2.0 U	14.7 U	42.7	4.6	0.14 JB	0.83 J
SP-1	W-081721-LT-01	08/17/2021	0.14 U	2.0 U	14.7 U	46.7	5.6	0.14 JB	0.67 J
SP-1		11/15/2021	Not enough water to collect sample						
SP-1		02/14/2022	Not enough water to collect sample						
SP-1	W-051622-TM-01	05/16/2022	0.80	4.6	15.5 U	53.3	6.3	0.14 J	1.5
SP-1 (DUP)	W-051622-TM-02	05/16/2022	0.81	4.0 U[11]	14.9 J	28.0	6.2	0.13 J	1.6

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SEEP SAMPLING
CALF SOURCE, LLC

Location	Sample ID	Date	Ammonia	BOD	COD	Fecal coliform bacteria	Nitrite/Nitrate	Phosphorus	TKN
		Units	mg/L	mg/L	mg/L	cfu/100mL	mg/L	mg/L	mg/L
SP-1	W-220815-LL-01	08/15/2022	0.14 U	2.0 U	14.7 U	TNTC	7.4	0.12 J	0.73 J
SP-1	W-111622-TM-02	11/16/2022	0.72	7.1 R6	30.5 J	388	0.75	0.25	1.6
SP-1 (DUP)	W-111622-TM-03	11/16/2022	0.76	9.1 R6	39.0 J	480	0.83	0.26	1.7
SP-2	W-111615-NC-02	11/16/2015	55.2	7.9	133	2000	4.7	36.7	60.7 P6
SP-2	W-022916-NC-03	2/29/2016	41.1	115 B3	354	90.0 U	64.0	11.0	49.3
SP-2		5/17/2016	Not enough water to collect sample						
SP-2	W-081716-NC-02	8/17/2016	28.3	194	256	10100	1.8	23.2	50.6
SP-2	W-111616-NC-01	11/16/2016	12.1	55.0	85.7	9.0 U	3.2	6.6	18.4
SP-2 (DUP)	W-111616-NC-02	11/16/2016	22.3	61.8	197	182	1.3	12.7	27.7
SP-2	W-030817-NC-01	3/8/2017	30.1	600	820	540	15.1	19.0	44.1
SP-2	W-051817-AL-02	5/18/2017	35.8	177	731	5450	22.1	12.3	51.6
SP-2	W-081617-AL-02	8/16/2017	61.7	48.9	387	690000	0.48 UD3	21.0	98.1
SP-2	W-111517-AL-02	11/15/2017	56.0	75.1	292	3640	0.48 UD3	17.0	60.9
SP-2	W-052418-NC-03	5/24/2018	29.7	20.0 U[7]	163	99.1	0.31	5.9	35.4
SP-2	W-081518-BL-01	8/15/2018	57.8	47.6	283	1260	0.90	24.2 M0	65.3
SP-2	W-111518-BL-03	11/15/2018	9.7	38.3 B1	94.9	9.0 U	8.2	1.3	13.8
SP-2		2/13/2019	Not enough water to collect sample						
SP-2	W-051519-BL-04	5/15/2019	687	4220 B1	9420	40000	0.95 UD3	40.7 M0	818
SP-2	W-081419-BL-06	8/14/2019	535	627	2330	1000000	0.95 UD3	33.9	613
SP-2	W-112519-NC-02	11/25/2019	28.8	14.5	147	2300	6.5	8.4	76.3
SP-2 (DUP)	W-112519-NC-04	11/25/2019	42.8	40.0 UB2	201	6670	3.5	11.8	93.6
SP-2		2/17/2020	Not enough water to collect sample						
SP-2		5/12/2020	Not enough water to collect sample						
SP-2	W-081220-LT-01	08/12/2020	5.6	30.4 B1	173	9090 U	0.30 UD3	10.6	11.7
SP-2 (DUP)	W-081220-LT-02	08/12/2020	5.6	46.5	178	1670 U	0.30 UD3	11.1	12.1
SP-2		11/10/2020	No Sample due to pump malfunction						
SP-2		2/15/2021	Not enough water to collect sample						
SP-2	W-051221-LT-02	05/12/2021	15.3	17.1	105	900	11.0	5.6	18.7
SP-2	W-081721-LT-02	08/17/2021	18.5	16.2	140	4.0 U	2.4	5.2	25.2
SP-2 (DUP)	W-081721-LT-03	08/17/2021	18.1	30.0 UB2	140	2.0 U	1.5	5.0	26.5
SP-2	W-111521-LT-01	11/15/2021	58.6	32.4 B1	318	24.4 U	0.89 JD3	10.3	58.8
SP-2 (DUP)	W-111521-LT-02	11/15/2021	37.2	48.1	197	24.4 U	1.3	9.4	41.1
SP-2	W-021422-LT-01	02/14/2022	21.7	14.4	114	4.0[9]	7.8	4.9	23.3
SP-2 (DUP)	W-021422-LT-02	02/14/2022	39.6	23.5	206	4.0[10]	3.6	8.7	40.4
SP-2	W-051622-TM-03	05/16/2022	2.1	10.0 U[12]	107	9.09	35.2	2.8	5.5
SP-2	W-220815-LL-02	08/15/2022	27.0	33.0 R6	195	TNTC	6.8	8.7	26.1
SP-2 (DUP)	W-220815-LL-03	08/15/2022	29.4	30.0 UR6[13]	186	TNTC	7.0	8.3	27.8
SP-2	W-111622-TM-04	11/16/2022	25.7	61.2	141	TNTC	0.059 U	15.1	29.0
SP-3	W-111615-NC-03	11/16/2015	59.6	15.3	167	5300	1.9	46.3 P6	71.7
SP-3	W-022916-NC-04	2/29/2016	34.5	151 B3	492	901 U	26.7	15.7 M0	45.8
SP-3	W-051716-NC-04	5/17/2016	69.4	89.2	627	1800	0.095 U	43.8	92.2
SP-3	W-081716-NC-01	8/17/2016	45.8	106	614	54000	0.095 U	23.6	76.6
SP-3		11/16/2016	Not enough water to collect sample						
SP-3	W-030817-NC-02	3/8/2017	3.7	5.3	103	18.0	59.5	4.9	2.8
SP-3	W-051817-AL-03	5/18/2017	27.5	16.9	238	TNTC[5]	75.5	4.4	32.9
SP-3	W-081617-AL-03	8/16/2017	47.2	56.7	387	270000	0.48 UD3	18.5	75.9
SP-3	W-111517-AL-03	11/15/2017	51.0	19.9	227	18200	0.48 UD3	15.0	56.2
SP-3	W-052418-NC-04	5/24/2018	43.5	216	592	5200	32.9	6.3	57.5
SP-3	W-081518-BL-02	8/15/2018	140	200 UB2	638	180	0.095 U	22.6	159
SP-3	W-081518-BL-03	8/15/2018	121	200 UB2	549	450	0.095 U	21.0	139
SP-3	W-111518-BL-04	11/15/2018	30.5	40.6	138	18.0	3.3	2.2	35.5
SP-3		2/13/2019	Not enough water to collect sample						
SP-3	W-051519-BL-05	5/15/2019	1060	4200 B1	13700	81800	1.9 UD3	73.1	1300
SP-3	W-081419-BL-05	8/14/2019	668	1500	4130	16400	0.95 UD3	44.4	808
SP-3	W-112519-NC-03	11/25/2019	37.4	33.7	320	15000	9.2	12.8	104
SP-3	W-021720-LT-02	2/17/2020	32.7	100 UB2	277	20000	7.4	8.3	38.7
SP-3 (DUP)	W-021720-LT-03	2/17/2020	37.6	111	255	22000	7.1	9.4	46.4
SP-3	W-051220-LT-02	5/12/2020	22.9	41.9	150	364	9.2	5.2	29.2
SP-3 (DUP)	W-051220-LT-03	5/12/2020	14.9	60.0 UB2	122	90.9	11.4	3.9	19.8
SP-3	W-081220-LT-03	08/12/2020	63.2	102	271	3500	7.5	12.0	66.3
SP-3	W-111020-LT-02	11/10/2020	71.5	49.3	266	80.0	4.4	14.4	80.7
SP-3 (DUP)	W-111020-LT-03	11/10/2020	100	93.8	342	60.0	3.6	17.7	113
SP-3		2/15/2021	Not enough water to collect sample						
SP-3	W-051221-LT-03	05/12/2021	123	48.0 R6	832	25.0 U	0.30 UD3	24.0	134

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SEEP SAMPLING
CALF SOURCE, LLC

Location	Sample ID	Date	Ammonia	BOD	COD	Fecal coliform bacteria	Nitrite/Nitrate	Phosphorus	TKN
		Units	mg/L	mg/L	mg/L	cfu/100mL	mg/L	mg/L	mg/L
SP-3 (DUP)	W-051221-LT-04	05/12/2021	135	96.8 B1	843	25.0 U	0.30 UD3	23.7	146
SP-3	W-081721-LT-04	08/17/2021	38.7	31.8 R6	217	400	0.96	8.9	47.0
SP-3	W-111521-LT-03	11/15/2021	64.8	46.4 B1	364	2600	2.7	11.5	58.6
SP-3		02/14/2022				Not enough water to collect sample			
SP-3	W-051622-TM-04	05/16/2022	88.5	227	807	3.8 U	7.7	12.3	104
SP-3	W-220815-LL-04	08/15/2022	140	31.6	461	TNTC	1.5	15.7	105
SP-3	W-111622-TM-05	11/16/2022	63.5	28.3	242	560	0.059 U	12.1	54.6
SP-4	W-111615-NC-04	11/16/2015	147	17.3	274	2620	0.71	73.4	224
SP-4	W-022916-NC-05	2/29/2016	104	281 B3	720	18000	1.1	28.8	134
SP-4	W-051716-NC-03	5/17/2016	122	33.7	426	901 U	0.095 U	29.1	144
SP-4	W-081716-NC-03	8/17/2016	100	200 UB2	596	1080	0.095 U	62.9	152
SP-4		11/16/2016				Not enough water to collect sample			
SP-4	W-030817-NC-03	3/8/2017	68.4	358	765	140000	4.2	26.8	108
SP-4	W-051817-AL-04	5/18/2017	93.1	200 U2q	364	68200	14.7	17.5	142
SP-4	W-081617-AL-04	8/16/2017	73.6	177	428	250000	9.7	68.9	133
SP-4	W-111517-AL-04	11/15/2017	69.8	56.6	545	10000	55.9	27.6	90.4
SP-4		8/15/2018				Not enough water to collect sample			
SP-4		11/15/2018				Not enough water to collect sample			
SP-4		2/13/2019				Not enough water to collect sample			
SP-4		5/15/2019				Not enough water to collect sample			
SP-4	W-081419-BL-04	8/14/2019	442	133	1250	74000	4.7	24.4	535
SP-4	W-112519-NC-05	11/25/2019	86.6	37.9	512	39000	0.55 JD3	29.0	227
SP-4		2/17/2020				Not enough water to collect sample			
SP-4		5/12/2020				Not enough water to collect sample			
SP-4		8/12/2020				Not enough water to collect sample			
SP-4		11/10/2020				Not enough water to collect sample			
SP-4		2/15/2021				Not enough water to collect sample			
SP-4		05/12/2021				Not enough water to collect sample			
SP-4	W-081721-LT-05	08/17/2021	8.3	12.2	100	1100	47.8	4.6	12.6
SP-4		11/15/2022				Not enough water to collect sample			
SP-4		02/14/2022				Not enough water to collect sample			
SP-4		05/16/2022				Not enough water to collect sample			
SP-4		08/15/2022				Not enough water to collect sample			
SP-4		11/16/2022				Not enough water to collect sample			
Field Blank	W-022916-NC-06	2/29/2016	0.80	2.0 UB3	13.4 U	1.0 U	0.095 U	0.052 U	0.50 U
Field Blank	W-051716-NC-05	5/17/2016	0.25 U	2.0 U	13.4 U	1.0 U	4.1	0.052 U1q	0.22 U
Field Blank	W-081716-NC-04	8/17/2016	0.25 U	2.0 U	13.4 U	1.0 U	4.1	0.052 U1q	0.22 U
Field Blank	W-111616-NC-03	11/16/2016	0.37 J	2.0 U	13.4 U	1.0 U	0.095 U	0.052 U	0.22 U
Field Blank	W-030817-NC-06	3/8/2017	0.25 U	-	13.4 U	1.0 U	0.095 U	0.052 U1q	0.22 U
Field Blank	W-051817-AL-06	5/18/2017	0.25 U	2.0 U	13.4 U	1.0 U	0.095 U	0.052 UM0	0.22 U
Field Blank	W-081617-AL-06	8/16/2017	0.51	2.0 U	13.4 U	1.0 U	0.095 U	0.052 U1q	0.22 U
Field Blank	W-111517-AL-06	11/15/2017	0.25 U	2.0 U	13.4 U	1.0 U	0.095 U	0.052 U	0.22 U
Field Blank	W-052418-NC-05	5/24/2018	0.25 U	2.0 U	13.4 U	1.0 U	0.12 J	0.052 U	0.22 U
Field Blank	W-081518-BL-04	8/15/2018	0.25 U	2.0 U	13.4 U	1.0 U	0.095 U	0.052 U1q	0.22 U
Field Blank	W-111518-BL-05	11/15/2018	0.32 J	2.0 U	13.4 U	1.0 U	0.095 U	0.052 U	0.22 U
Field Blank	W-021319-BL-03	2/13/2019	0.25 U	2.0 U	13.4 U	1.11 U	0.095 U	0.052 U	0.22 U
Field Blank	W-051519-BL-03	5/15/2019	0.25 U	2.0 U	13.4 U	2.0 U	0.095 U	0.052 U1q	0.22 U
Field Blank	W-081419-BL-03	8/14/2019	0.51	2.0 U	13.4 U	2.0 U	0.095 U	0.052 U	0.22 U
Field Blank	W-021720-LT-04	2/17/2020	0.14 U	2.0 U	15.5 U	1.0 U	6.2	0.052 J	0.21 U
Field Blank	W-051220-LT-04	5/12/2020	0.14 U	2.0 U	14.7 U	1.8 U	0.059 U	0.029 U	0.21 U
Field Blank	W-081220-LT-05	08/12/2020	0.14 U	2.0 U	14.7 U	1.0 U	0.059 U	0.029 U	0.21 U
Field Blank	W-111020-LT-04	11/10/2020	0.14 U	2.0 U	14.7 U	1.1 UT3	6.1	0.080 JB	0.21 U
Field Blank	W-051221-LT-05	05/12/2021	0.14 U	2.0 U	14.7 U	1.0 U	0.059 U	0.051 JB	0.21 U
Field Blank	W-081721-LT-06	08/17/2021	0.14 U	2.0 U	14.7 U	2.0 U	0.059 U	0.044 JB	0.21 U
Field Blank	W-111521-LT-04	11/15/2021	0.14 U	2.0 U	14.7 U	2.0 U	0.059 U	0.074 JB	0.21 U
Field Blank	W-021422-LT-03	02/14/2022	0.14 U	2.0 UH1	14.7 U	2.0 UH3	0.059 U	0.029 U	0.21 U
Field Blank	W-051622-TM-05	05/16/2022	0.14 U	2.0 U	14.7 U	2.0 U	0.059 U	0.050 U	0.21 U
Field Blank	W-220815-LL-05	08/15/2022	0.14 U	2.0 U	14.7 U	4.0 U	0.059 U	0.050 U	0.21 U
Field Blank	W-111622-TM-01	11/16/2022	0.14 U	2.0 U	14.7 U	2.0 U	0.059 U	0.054 J	0.21 U

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SEEP SAMPLING
CALF SOURCE, LLC

Location	Sample ID	Date	Ammonia	BOD	COD	Fecal coliform bacteria	Nitrite/Nitrate	Phosphorus	TKN
		Units	mg/L	mg/L	mg/L	cfu/100mL	mg/L	mg/L	mg/L

Notes:

BOD - Biochemcial Oxygen Demand
COD - Chemical Oxygen Demand
TDS - Total Dissolved Solids
TKN - Total Kjeldahl Nitrogen
mg/L - milligrams per liter
cfu/100mL - colony forming units per 100 milliliters
U - Not detected at the associated reporting limit.
J - Estimated value
D3 - Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
B1 - Less than 1.0 mg/L DO remained for all dilutions set. The reported value is an estimated greater than value and is calculated for the dilution using the least amount of sample.
B2 - Oxygen usage is less than 2.0 for all dilutions set. The reported value is an estimated less than value and is calculated for the dilution using the most amount of sample.
B3 - The dissolved oxygen depletion of the dilution water blank exceeded 0.2 mg/L.
P6 - Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
1q - Analyte was measured in the associated method blank.
2q - BOD result is 194 mg/L. This result is less than the reporting limit multiplied by the dilution factor.
D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
R6 The RPD between valid sample dilutions exceeded 30%.
T3 - Insufficient sample received from client to perform the analysis per EPA method requirements.
H3 - Sample was received or analysis requested beyond the recognized method holding time.
[1] - BOD result is 17.6 mg/L. This result is less than the reporting limit multiplied by the dilution factor.
[2] Sample and Duplicate failed SM 9222D duplicate criteria. Unable to reanalyzed as a result of sample having exceeded hold time.
[3] - BOD result is 9.5 mg/L. This result is less than the reporting limit multiplied by the dilution factor.
[4] - BOD result is 2.18 mg/L. This result is less than the reporting limit multiplied by the dilution factor.
[5] - All plates were overgrown and too numerous to count. The highest dilution performed was at a rate of 1/100.
[6] - The BOD result is 4.56 mg/L. This is less than the dilution multiplied by the reporting limit.
[7] - BOD result is 18.5 mg/L. This result is less than the reporting limit multiplied by the dilution factor.
[8] - Analyte was measured in the associated method blank at a concentration of -0.076 mg/L.
[9] - Results reported as TNTC. The highest dilution had an out of range count of 203 with a result of 4060 with a PQL of 20.0.
[10] - Results reported as TNTC. The highest dilution had an out of range count of 90 with a result of 1800 with a PQL of 20.0.
[11]The BOD result is 3.0 mg/L. This is less than the reporting limit mulitiplied by the dilution factor.
[12]The BOD result is 5.9 mg/L. This is less than the reporting limit mulitiplied by the dilution factor.
[13]The BOD result is 20.3 mg/L. This is less than the reporting limit mulitiplied by the dilution factor.
TNTC - Too numerous to count (CFU's were grown together and too numerous to count on all plates.)
There was not enough water in the SPs to collect a field duplicate during the 8/17/2016 Quarterly Sampling Event.
On 2/13/2018 no water was present at any sample locations. No samples collected.

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
1300 W. Clairemont Ave.
Eau Claire WI 54701

Tony Evers, Governor
Adam N. Payne, Secretary
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March 27, 2024

Brown County
Approval

Todd Willer
Calf Source LLC
N3569 Vanden Bosch Rd
Kaukauna, WI 54130

SUBJECT: Conditional Approval of Calf Source LLC Nutrient Management Plan, WPDES Permit No. 0061697-05-0

Dear Mr. Willer:

After completing a review of Calf Source LLC 2023-2027 Nutrient Management Plan (NMP) the Wisconsin Department of Natural Resources (Department) is providing conditional approval that it is consistent with Nutrient Management Requirements in s. NR 243, Wis. Adm. Code. This part of your WPDES permit application is now ready for the public notice and comment process as required by Ch. 283 Stats.

Before applying manure onto approved fields each season, the Department recommends Calf Source LLC review the NMP with those individuals involved with manure applications to ensure all remain familiar with the approved manure spreading protocol, spreading maps, field and map verification, record keeping requirements, and all the conditions of this approval. Specifically, some fields in Calf Source LLC may have:

- Soils that may have bedrock or groundwater within 24 inches of surface,
- Multiple setback areas due to streams, conduits to streams, grassed waterways, wetlands or wells, and
- Evidence of possible soil erosion/flow channels. Note: road ditches or other man made channels may be considered flow channels or conduits to navigable water and may be subject to a SWQMA and setback.

Reviewing the NMP and checking fields for these features and soil conditions prior to manure applications will help Calf Source LLC maintain compliance with their WPDES permit and Ch. NR 243 requirements.

FINDINGS OF FACT

The Department confirms that:

1. A current calves and goats herd size of 2,641 animal units (10,981 calves and 4,448 goat kids). A planned herd size of 3,000 animal units (12,500 calves and 5,000 goat kids) by 2024.
2. Manure generation and spreading records indicate your herd will annually generate approximately 8,480,861 gallons of manure and process wastewater and 36,317 tons of solid manure in the first year of the permit term.
3. The use of application restriction options 1 and 5 within surface water quality management areas.
4. The use of phosphorus delivery method P Index.
5. That Calf Source LLC currently has 5,644.1 acres (229.1 owned and 5,454.3 controlled through contracts, rental agreements or leases, or under manure agreements). **Calf Source LLC currently has 1,737.1 acres**

that are not compliant with soil testing requirements and therefore are prohibited from manure and process wastewater applications. This leaves the farm at 3,795.6 total spreadable acres.

6. That some fields included in the NMP are directly adjacent to or have high potential to deliver nutrients and sediment to Branch River (listed 303(d) impaired water by 'PCBs and Total Phosphorus'), Devils River (listed 303(d) impaired water by 'Total Phosphorus'), West Twin River (listed 303(d) impaired water by 'Total Phosphorus, PCBs, and Unknown Pollutant'), Neshota River (listed 303(d) impaired water by 'Total Phosphorus'), Black Creek (listed 303(d) impaired water by 'Total Phosphorus'), 89100 (listed 303(d) impaired water by 'Total Phosphorus'), Twin Hill Creek (listed 303(d) impaired water by 'Total Phosphorus').
7. That no fields are directly adjacent to or have high potential to deliver nutrients and sediment to outstanding/exceptional waters.
8. That the following fields included in the NMP are located within the well head protection area for the Village of Denmark: 719-35N, 719-35, 702-049 Norbs
9. That 13 fields are tiled.

- 700-005
- 700-008
- 700-010
- 700-011
- 700-014
- 700-015
- 700-016
- 700-017
- 700-018
- 700-019
- 700-020
- 700-021
- 700-024

10. That all fields will be checked for the following features prior to/during manure or process wastewater applications: soil areas with possible shallow groundwater (i.e., within 24 inches of surface) at the time of manure application; required setbacks associated with wells, navigable waters, conduits to navigable waters, grassed waterways, wetlands, possible soil erosion/flow channels.
11. That surface applications of manure will not be completed when precipitation capable of producing runoff is forecasted within 24 hours of the time of planned application.

CONDITIONAL NUTRIENT MANAGEMENT PLAN APPROVAL

The Department hereby approves the 2023-2027 Calf Source LLC Nutrient Management Plan subject to the following conditions and the applicable requirements of Ch. NR 243, Wis. Adm. Code:

FIELD AND MANURE MANAGEMENT

1. Fields not included in the NMP and new fields shall not receive manure or process wastewater applications until they have been properly soil sampled, entered into Snap Plus, evaluated for their nutrient needs, and approved by the Department.

2. The following fields have also been approved to receive industrial, municipal, or septage waste:

Field Name	Other Permittee Name	Other Permittee Field Name	DNR #
719-08-8A	NLC ENERGY DENMARK LLC	1	100831
714-045	NLC ENERGY DENMARK LLC	2B	32091
719-08-8A	NLC ENERGY DENMARK LLC	21	47755
714-045	NLC ENERGY DENMARK LLC	3A	109391

719-08-8A	NLC ENERGY DENMARK LLC	2	100866
714-049	NLC ENERGY DENMARK LLC	1	117830
719-15	NLC ENERGY DENMARK LLC	1	112566
719-09	NLC ENERGY DENMARK LLC	1	100865
714-047	NLC ENERGY DENMARK LLC	3B	109392
714-043	NLC ENERGY DENMARK LLC	2B	32091
719-21B	NLC ENERGY DENMARK LLC	1	98570
719-16	NLC ENERGY DENMARK LLC	2	112567
719-21	NLC ENERGY DENMARK LLC	2	98571
719-10	NLC ENERGY DENMARK LLC	20	47754
719-40	NLC ENERGY DENMARK LLC	1	118623
714-043	NLC ENERGY DENMARK LLC	2A	109390
714-047	NLC ENERGY DENMARK LLC	3A	109391
719-21	NLC ENERGY DENMARK LLC	3	98572
714-042	NLC ENERGY DENMARK LLC	1	111538
714-049	NLC ENERGY DENMARK LLC	2	118689
714-045	NLC ENERGY DENMARK LLC	2A	109390
717-006 Crosby	BELGIOIOSO CHEESE INC DENMARK	1	116290
714-046	NLC ENERGY DENMARK LLC	2B	32091
714-044	NLC ENERGY DENMARK LLC	1	109389
719-49	NLC ENERGY DENMARK LLC	1	117828
719-21C	NLC ENERGY DENMARK LLC	1	98570
714-041	NLC ENERGY DENMARK LLC	1	111557

714-025	NLC ENERGY DENMARK LLC	1	111558
714-031	NLC ENERGY DENMARK LLC	1	111555
714-021	NLC ENERGY DENMARK LLC	1	111072

Prior to any manure applications on these fields Calf Source LLC shall contact the entities listed above to obtain recent spreading records and make the necessary adjustments to the planned manure application rates. At the end of each year Calf Source LLC shall contact each entity listed above to obtain spreading records from the previous year so that they can be properly tracked in the NMP. Please Note: Calf Source LLC is responsible for obtaining nutrient content values for all other wastes spread on any field in their NMP.

3. The following fields are prohibited from receiving applications of manure or process wastewater due to using default soil test levels or do not meet the required testing density:
   SEE APPENDIX A FOR A LIST OF PROHIBITED FIELDS

   If Calf Source LLC wishes to use these fields for applications of manure or process wastewater all necessary information shall be submitted to the Department prior to application to demonstrate compliance with NR 243 and other applicable codes. Written Department approval amending this condition approval must be received prior to application.

4. If existing fields yield a soil test results equal to or greater than 200 ppm P, those fields would be prohibited from receiving manure or process wastewater applications, unless you obtain Department approval in accordance with NR 243.14(5)(b)2., Wis. Adm. Code.

5. All liquid manure samples collected may be analyzed, at a minimum, for percent dry matter, total nitrogen, percent NH_4-N, percent NO_3-N, phosphorus, potassium, and sulfur.

6. If manure sample results have a dry matter (DM) content less than 2.0% and the percent ammonium (NH_4^+) is greater than 75% of the total N, Calf Source LLC may use the following equation to adjust the first year available nitrogen when applications are injected or incorporated within 1 hour:

   $$\text{First-Year Available N} = NH_4\text{-N} + [0.25 \times (\text{Total N} - NH_4\text{-N})]$$

7. Calf Source LLC shall record daily manure applications by using form 'Spreading Logs'. These forms shall be retained at the farm and provided to the department upon request.

8. Calf Source LLC shall annually submit a spreading report that summarizes the land application activities listed under NR 243.19(3)(c)5., Wis. Adm. Code by using the SNAP+ Annual Spreading Report.

<u>WINTER SPREADING</u>

9. Liquid manure applications during winter conditions, as defined by NR 243.14(7), Wis. Adm. Code, are prohibited with the exception of emergency applications.

10. The following field(s) are <u>approved</u> for winter spreading solid manure, emergency applications of liquid manure and frozen liquid manure:

- 700-002
- 700-008
- 700-009

- 700-010
- 700-011
- 700-013
- 700-014
- 700-016
- 700-017
- 700-018
- 700-019
- 700-020
- 700-022
- 700-023A
- 700-024
- 700-025

11. The following field(s) are <u>denied</u> for winter spreading solid manure, emergency applications of liquid manure and frozen liquid manure:

    - 700-015 (location and acreage)
    - 700-021 (location and acreage)

12. Winter spreading of solid and liquid manure may not occur during the "high risk runoff period" pursuant to s. NR 243.14(6)(c) and NR 243.14(7)(c), respectively.

13. Winter applications of liquid manure shall only occur under emergency situations, after notifying the Department and receiving verbal approval.

14. Liquid applications shall be limited to 3,500 gallons per acre or 30 lbs. P per acre, whichever is less, on slopes 2-6% and 7,000 gallons per acre or 60 lbs. P per acre, whichever is less, on slopes 0-2%. Winter applications of solid manure shall be limited to 60 lbs. P per acre.

<u>HEADLAND STACKING</u>

15. No headland stacking sites are approved.

<u>MANURE & PROCESS WASTEWATER IRRIGATION</u>

16. Irrigation of manure or process wastewater is prohibited.

<u>NR243.143/151.075 SILURIAN BEDROCK PERFORMANCE STANDARDS</u>

17. Manure generated by Calf Source LLC that is mechanically applied to the following approved fields meet planning requirements under NR243.143/151.075, Silurian bedrock performance standards. The following fields are required to meet all requirements under NR243.143/151.075, Silurian bedrock performance. Any fields not on this list that are identified as <20ft to Silurian bedrock must abide by the same rules:
    SEE APPENDIX B FOR FULL LIST OF SILURIAN BEDROCK FIELDS

<u>SUBMITAL AND RECORDKEEPING REQUIREMENTS</u>

18. A copy of this conditional approval shall be included in all future annual Nutrient Management Plan Updates in addition to the NR 243 and NRCS 590 checklists.

<u>CONSIDERATIONS:</u>

19. A large percentage of fields within this NMP are using default soil tests rather than obtaining up to date soil tests. It was communicated by Calf Source LLC that they do not intend to soil test these fields unless manure is to be applied as a contingency plan. It is recommended that the farm soil sample these fields and update the NMP with the results in order to accurately mange those fields to meet compliance with NR 243, NRCS 590,

and NR 151. If fields are planned to not be managed to meet compliance with the above codes, Calf Source LLC should consider removing those fields from the NMP.

This conditional approval does not limit the Department's regulatory authority to require NMP revisions (based upon new information or manure irrigation research findings) or request additional information in order to confirm or ensure your farm operation remains in compliance with NR 243 and your WPDES permit conditions. If additional information, project changes or other circumstances indicate a possible need to modify this approval, the Department may ask you to provide further information relating to this activity.

Please keep in mind that approval by the Department of Natural Resources – Runoff Management Program does not relieve you of obligations to meet all other applicable federal, state or locate permits, zoning and regulatory requirements.

If you have any questions regarding this approval I can be reached at 715-839-3775 or Aaron.Orourke@Wisconsin.gov.

Sincerely,

Aaron O'Rourke
WDNR Nutrient Management Program Coordinator
Wisconsin Department of Natural Resources

cc: Holly Stegemann, WDNR Agricultural Runoff Specialist (Holly.Stegemann@Wisconsin.gov)
Joseph Baeten, WDNR Watershed Field Supervisor (Jospeh.Baeten@Wisconsin.gov)
Chris Clayton, WDNR Ag Runoff Section Chief (Christopherr.Clayton@Wisconsin.gov)
Ashley Scheel, WDNR CAFO NMP Reviewer (Ashley.Scheel@Wisconsin.gov)
Falon French, WDNR Intake Specialist (Falon.French@Wisconsin.gov)
John Bechle, Brown County (John.Bechle@browncountywi.gov)
Todd Schaumberg, Tilth Agronomy (todd@tilthag.com)
Village of Denmark, (sherri@vi.denmark.wi.gov)
File

APPENDIX A: FIELDS PROHIBITED DUE TO DEFAULT SOIL TESTS.

700-023B	719-13	719-40B
702-016	719-14	719-41
700-007	719-15	719-44-44N
700-003	719-16	719-48
714-040	719-19	719-49
717-003 Klika	719-20	719-51

717-006 Crosby	719-21	719-55
717-007 Pit North	719-21A	719-56
717-011 Schaetz	719-21B	719-57-57A
717-013 Berney	719-21C	719-58
717-014 Schley Road	719-22	719-58A-58B
717-016 Townhall	719-23-23B	719-60
717-021 Michiels/Lor itz	719-23A	719-61
717-022 Allen Land	719-23D	725-001 W
719-01	719-23E	725-002 E
719-02-2A	719-23F	726-015
719-03	719-24	727-003
719-04	719-31	727-032
719-05	719-32	
719-07	719-35	
719-08-8A	719-35N	
719-09	719-36	
719-10	719-39	
719-11	719-40	
719-12	719-40A	

APPENDIX B: APPROVED SILURIAN BEDROCK FIELDS

700-006	700-023B	722-001 NE
700-007	700-024	722-001 NW
700-008	700-025	722-001 S
700-010	700-026	722-002
700-011	702-036	722-003
700-012	702-050 Hendricks	722-004
700-013	713-001	722-005 N
700-014	713-002	722-007 K7
700-015	713-003	722-008 K8
700-016	713-004	722-010 K10
700-017	713-005	722-011 K11
700-018	714-049	725-001 W
700-020	717-014 Schley Road	725-002 E
700-022	719-01	
700-023A	719-08-8A	