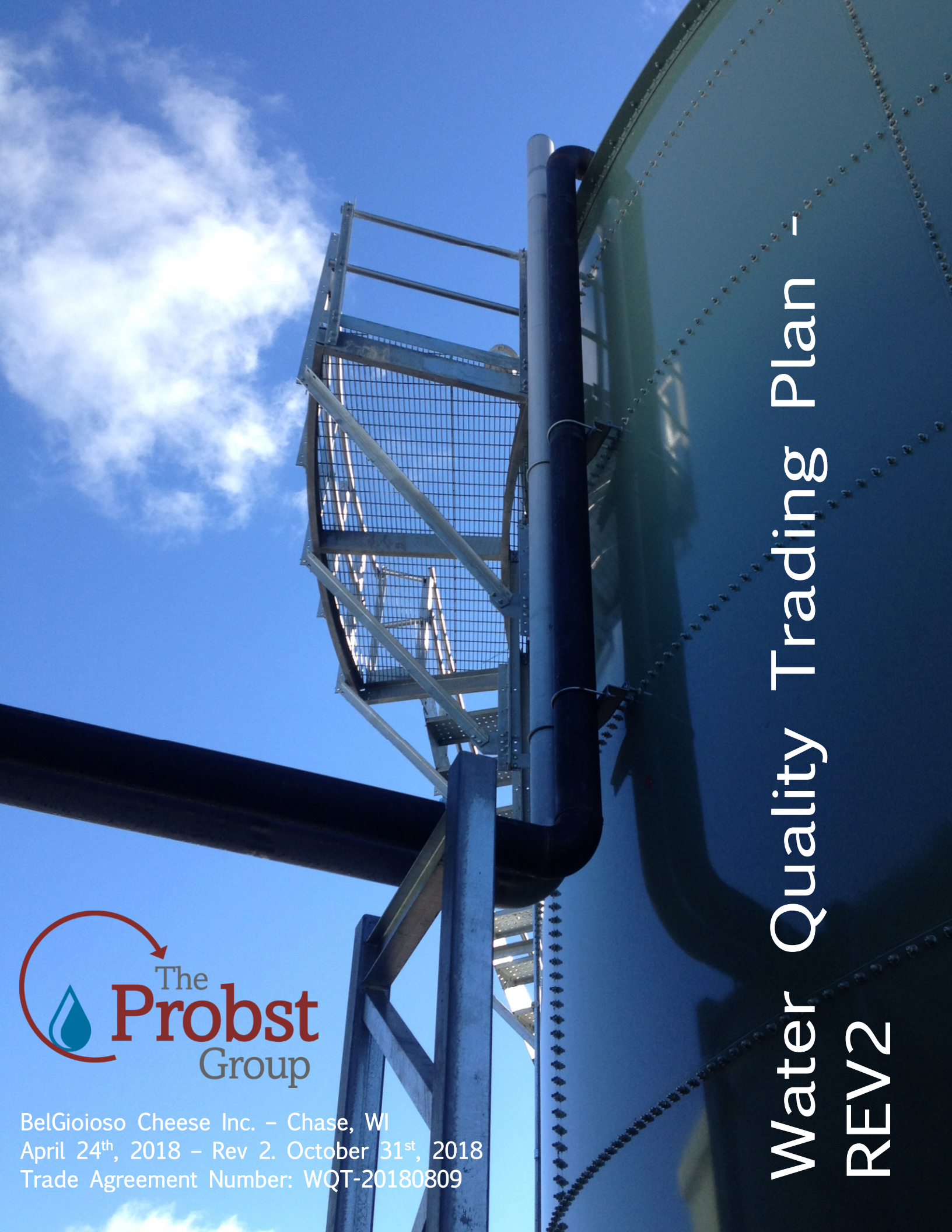


Water Quality Trading Plan - REV2

The Probst Group

BelGioioso Cheese Inc. – Chase, WI
April 24th, 2018 – Rev 2. October 31st, 2018
Trade Agreement Number: WQT-20180809

TABLE OF CONTENTS

1 Introduction 1

2 Background 1

2.1 Purpose for Water Quality Trade 1

2.2 Purpose for New Surface Water Outfall 2

2.3 Wastewater Treatment Plant Overview 2

2.4 Location of Outfall and Fields 4

2.4.1 Location of Outfall 005 4

2.4.2 Location of the Fields 4

3 Existing Conditions and Potentially Tradeable Phosphorus Modeling 6

3.1 Existing Land Use of the Fields 6

3.2 Soil Sampling 7

3.3 Modeled PTP Under Current Conditions 7

3.4 Modeled PTP with Proposed Permanent Grassland 9

3.5 Calculation of Change in PTP Based on Modified Land Use 10

4 Trade Ratio Calculation 11

4.1 Individual Trade Ratio Factors 11

4.1.1 Delivery factor: 11

4.1.2 Downstream factor: 11

4.1.3 Equivalency factor: 12

4.1.4 Uncertainty factor: 12

4.1.5 Habitat Adjustment factor: 12

4.2 Calculation of Trade Ratio Based on Individual Factors 12

5 Credit Generation Calculation 13

6 Land Application Nutrient Management Plans 15

7 Management Practice Description 20

7.1 Installation Plan 20

7.2 Operation and Maintenance Plan 20

8 Timeline 20
8.1 Schedule for Construction and Initial Operation of WWTP 20
8.2 Schedule for Installation of Permanent Vegetative Practice 20
9 Inspections and Reporting 21
9.1 Water Quality Trading Management Practice Registration 21
9.2 Monthly Certification 21
9.3 Annual Inspections 21
9.4 Notification of Problems with Cover Management Practice 21
9.5 Annual Water Quality Trading Report 22
9.6 WDNR Right to Inspect the Fields 22
10 Compliance with Water Quality Trading Checklist 23
11 Certification of Water Quality Trade Report 24

Attachments

A – Notice of Intent (NOI) to Conduct Water Quality Trading
B – Watershed, Subwatershed, and Field Maps
C – Existing Farming Practices Questionnaire
D – Soil Sampling Results
E – SnapPlus Modeling Reports (Current)
F – SnapPlus Modeling Reports (Prairie)
G – Blank "Practice Registration Form" 3400-207
H – Prairie Establishment Plan
I – Prairie O&M Plan

1 Introduction

This water quality trading plan summarizes the plan for BelGioioso Cheese Inc. (BelGioioso) in Chase, WI to use water quality trading to comply with phosphorus discharge limits in its Wisconsin Discharge Elimination System (WPDES) permit for Outfall 005. To assist in complying with BelGioioso's phosphorus discharge limits, BelGioioso will install and maintain permanent vegetative cover (aka. grassland) on previously farmed fields within the same subwatershed as Outfall 005 on property owned by BelGioioso.

BelGioioso has used SnapPlus modeling to quantify the amount of potentially tradable phosphorus from the fields assuming current farming practices continued, and then the amount after installation and maintenance of a permanent vegetative cover. Using a trade ratio of 1.2:1, BelGioioso calculated the phosphorus water quality trading credits available per year based on the change in management practice from farming in corn and soybean rotation to permanent vegetative cover at the three farm fields. BelGioioso will use these credits to demonstrate compliance with the total phosphorus limit in their WPDES permit.

2 Background

2.1 Purpose for Water Quality Trade

The purpose of this Water Quality Trading Plan is to describe BelGioioso's use of water quality trading to comply with the Total Phosphorus limits on Outfall 005 of WPDES permit WI-0065579-01. This Water Quality Trading Plan was developed pursuant to the Notice of Intent to Conduct Water Quality Trading included in Attachment A.

In particular, BelGioioso will trade with property owned by BelGioioso the same HUC-12 subwatershed as Outfall 005. These fields will be placed into perennial vegetation and BelGioioso will use the phosphorus credits generated from this management practice to comply with the Total Phosphorus limits their WPDES permit. Because BelGioioso is both the credit generator and the credit user, BelGioioso is entering into a trade agreement with the Wisconsin Department of Natural Resources (WDNR).

With a total phosphorus 6-month average limit of 0.075 mg/L BelGioioso expects to need 44 to 114 lb TP credits per year assuming a combined NCCW and WWTP effluent of 0.1 – 0.14 mg/L and an average yearly design flow rate of 0.483 MGD. BelGioioso will be able to control the phosphorus concentration of their process wastewater via chemical addition to meet the available annual trade discussed further in Table 6 of Section 5.

2.2 Purpose for New Surface Water Outfall

BelGioioso has historically hauled their wastewater to the Green Bay Metropolitan Sewerage District wastewater treatment plant (WWTP). When weather allows, BelGioioso can land apply their normal strength wastewater under the Land Application of Liquid Industrial Waste General Permit. Historically, this land application of industrial liquid waste was done on portions of Fields A1 and B that are proposed for conversion to permanent prairie as part of this trade, as well as several other fields.. See maps in Section 6 showing current land application sites that will be used for application of biosolids once the new Wastewater Treatment Plant (WWTP) is in operation. Note that there are other fields, not listed in this report, that are used for land application that will not be used once the new WWTP is in operation. Following implementation of cropping changes, land application will no longer occur on the fields used to generate trade credits. In the future, a SnapPlus Nutrient Management Plan report will be run for any other sites on which WWTP biosolids is land applied to ensure that there is no overloading of those fields as a result of this trade.

Noncontact cooling water is currently discharged via a drainage ditch to Unnamed Tributary WBIC 5014803 and is covered under the Noncontact Cooling Water or Condensate and Boiler Water General Permit (NCCW GP).

Hauling wastewater off-site is expensive, so BelGioioso is pursuing their own on-site WWTP. BelGioioso plans to combine treated process wastewater from their new WWTP with the NCCW discharge via a new outfall pipe to an onsite agricultural ditch which flows into an unnamed tributary (WBIC 5014649) to the North Branch Suamico River. This surface water outfall for the combination of treated process wastewater and NCCW will allow them to discharge year-round and in all weather conditions.

2.3 Wastewater Treatment Plant Overview

BelGioioso intends to build a wastewater treatment plant (WWTP) onsite at their Chase facility. A full design report with plans was submitted electronically to WDNR for review on April 24th, 2018 with paper copies that followed in the mail. Those plans were subsequently approved by WDNR on May 25th, 2018. A summary of that report is provided in this section of the Water Quality Trading plan with additional detail related to treatment design in that report.

The new WWTP will include an influent lift station and screening before wastewater enters the equalization tank. Primary solid/liquid separation will then take place in the dissolved air floatation (DAF). Solids removed from the DAF will be sent to the sludge storage tanks. Liquid from the DAF will progress to the selector silo and aeration basin for further treatment. Additional solid/liquid separation will occur in the ultrafiltration membrane system. Solids from the membranes can be wasted to the sludge storage

tanks where it will be mixed with the solids removed from the DAF. Permeate from the membranes will flow to the effluent lift station where the treated wastewater will mix with noncontact cooling water and reverse osmosis permeate from the production facility prior to the final stage of treatment in the cooling towers. Wastewater will then be discharged to surface water.

Sludge removed from the treatment system via the DAF and the UF membranes will be stored in the sludge storage tanks until it can be hauled offsite. Sludge will either be land applied on approved sites or will be disposed of via other methods of disposal such as being sent to GBMSD for incineration, treatment in a digester offsite, or other alternatives. Sludge will be sampled as required by the WPDES permit and reporting will be done on WDNR's form 3400-49 Characteristic Report. Sampling requirements in the permit are expected to include total solids, total kjeldahl nitrogen, chloride, pH, ammonia nitrogen, total phosphorus, water extractable phosphorus, and total recoverable potassium. If the sludge is land applied, volumes and locations will be reported on the 3400-55 form, and if sludge is hauled to other methods of disposal, volumes and locations will be reported on the 3400-52 form. No land application will occur on the fields used to generate trade credits. A SnapPlus Nutrient Management Plan report will be run for any sites within the HUC-12 on which waste is land applied to ensure that there is no overloading of those fields as a result of this trade.

A majority of the process wastewater is currently hauled to Green Bay Metropolitan Sewerage District where wastewater is treated. The resulting sludge is incinerated before being discharged in local landfills. Land application of raw wastewater is not expected to occur frequently following construction of the new WWTP, but land application of sludge generated by the WWTP is likely to occur. No land application will occur on the fields being used for this trade. A SnapPlus Nutrient Management Plan report will be run for any other sites on which WWTP biosolids is land applied to ensure that there is no overloading of those fields as a result of this trade

Chemical addition can occur at several locations in the wastewater treatment process with quantities that will vary based on operational setpoints. Acid and caustic can be added in the mix line of the equalization tank to regulate pH of the wastewater entering the WWTP. Polymer can be added prior to the DAF to improve solid/liquid separation efficiency. Ferric can be added to the selector silo and/or aeration basin mix lines to encourage flocculation of solids and removal of phosphorus from the wastewater effluent.

Probst has extensive experience in design and operation of wastewater treatment plants, especially in the dairy industry. Similar treatment systems have process wastewater effluent that consistently ranges from 0.2 – 0.3 mg/L phosphorus depending on the amount of polymer and ferric dosed into the system. When NCCW and RO permeate

flows, with anticipated phosphorus concentrations between non-detect levels and 0.05 mg/L, are mixed with the process wastewater, BelGioioso will be able to achieve a combined phosphorus effluent concentration in the range of 0.1 – 0.14 mg/L, as discussed in Section 2.1 above. Operators will ensure that appropriate chemical dosing occurs to ensure compliance with the permitted phosphorus mass discharged from the Outfall taking the available phosphorus credits generated by the water quality trade into account. BelGioioso understands the quantity of phosphorus credits that are available as a result of this trade and will apply the necessary chemicals to ensure compliance with their permitted phosphorus requirements.

2.4 Location of Outfall and Fields

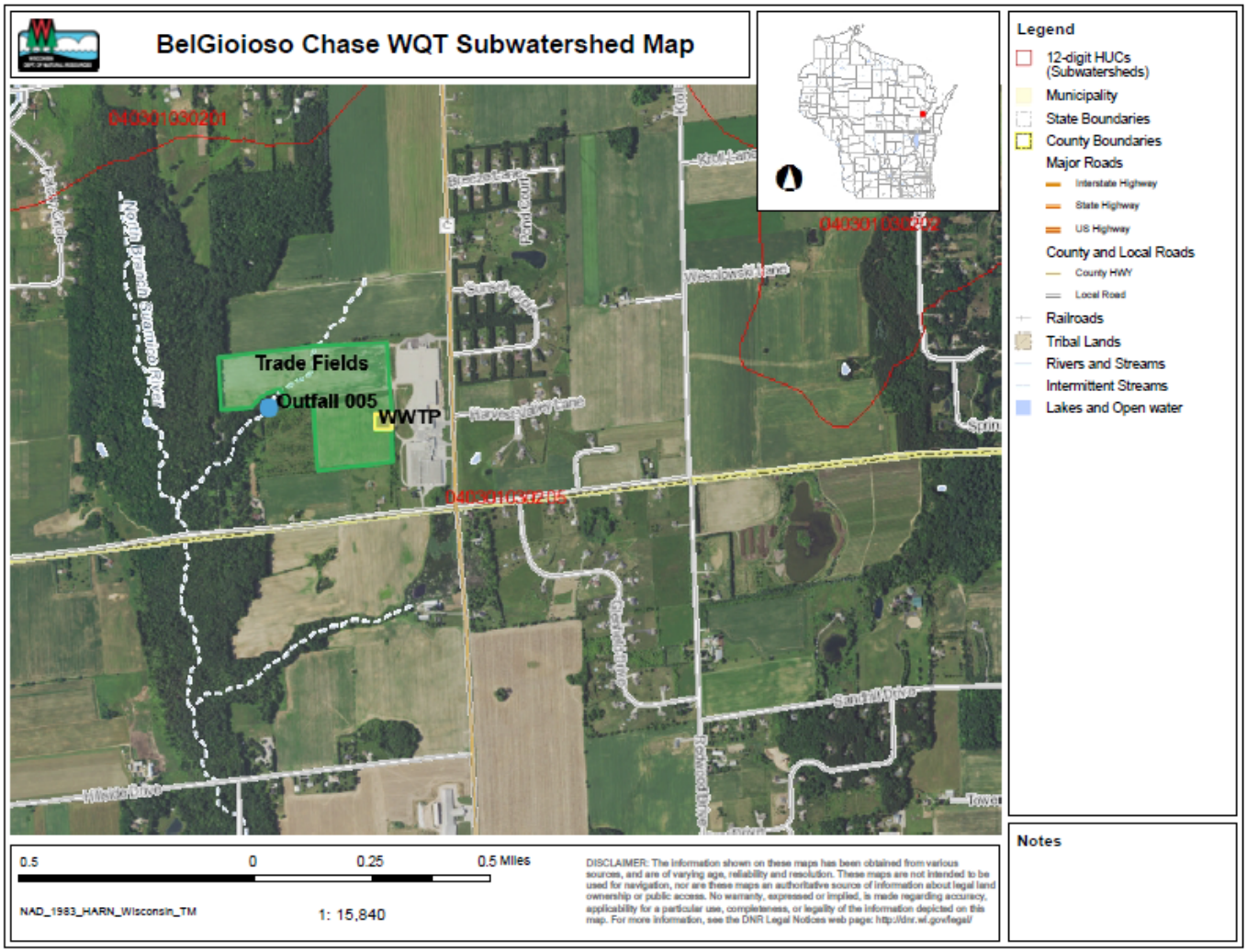
2.4.1 Location of Outfall 005

BelGioioso will discharge treated process wastewater to the Unnamed Tributary WBIC 5014649 through Outfall 005 at approximate latitude of 44.67863°N and longitude of 88.15955°W. Outfall 005 is located in HUC12 Subwatershed 040301030205, which is also known as the North Branch Suamico River – Suamico River Subwatershed. The North Branch Suamico River – Suamico River Subwatershed is part of the larger Suamico and Little Suamico Rivers – Frontal Green Bay Watershed (0403010302), which drains to Green Bay on its way to Lake Michigan. North Branch Suamico River – Suamico River Subwatershed is not subject to a total maximum daily load (TMDL) and is not upstream of a watershed subject to a TMDL. Figure 1 below depicts the location of Outfall 005 in the Subwatershed. This is also given in Attachment B.

2.4.2 Location of the Fields

BelGioioso will implement the management practices to generate phosphorus credits on their property. 28.1 acres of the proposed trade fields are upstream of Outfall 005 that are also within the North Branch Suamico River – Suamico River Subwatershed, but 10.1 acres are downstream. A map is included in Attachment B which shows the portions of the fields that are upstream and downstream of Outfall 005.

Figure 1
Subwatershed Map with Outfall and Fields shown



The Fields are located within Town of Chase (Oconto County, WI) Parcels 012353502544A, 012353502142B, and 012353502443C. These parcels are all located in SEC 35 TWP 26N R 19E. BelGioioso owns two other parcels within the North Branch Suamico River – Suamico River Subwatershed that have historically been used for land application by the Chase facility. See maps in Attachment B.

Land application of liquid industrial wastewater from the Chase facility is expected to decrease dramatically with the installation of the new wastewater treatment plant. Any land application of liquid industrial wastewater that may occur would occur infrequently and would be the result of an upset at the WWTP. All land application that does occur will be done in accordance with the requirements and limits of the WPDES permit. No land application will occur on fields being used to generate trade credits. A SnapPlus

Nutrient Management Plan report will be generated annually for each field on which waste was land applied. The Nutrient Management Plan report will show nutrient loading compared to University of Wisconsin recommendations for the crop planted to ensure that the fields receiving waste (WWTP biosolids) are not overloaded. The reports will be used to model the original phosphorus non-point load to surface waters before and after land application of waste (WWTP biosolids) and will help verify waste application does not increase phosphorus load to surface waters.

Table 1 below describes the current and future land use.

Table 1
Parcels owned by BelGioioso Impacted by Water Quality Trade

WQT Field Name	Parcel ID	Legal Description	Total Acreage	Previously Farmed Acreage	Acreage Converted to Permanent Grassland
A1	012353502544A	E1/2 OF SE S E EXC V714-P287 N/K/A PRT SESE&NESE AS DES IN V1577-P372 1577-372 655750	37.91	8.40	6.5
B	012353502142B	S1/2 OF NW S E 603-826 781-375	20.00	20.00	18.5
C2	012353502443C	PRT SWSE &SE SE COM S1/4 COR TH N750'POB ETC.AS IN V787-P456.EXC V1174-P632 . 1592-835 659367	32.00	15.90	13.2
	TOTAL	-	89.91	44.3	38.2

3 Existing Conditions and Potentially Tradeable Phosphorus Modeling

3.1 Existing Land Use of the Fields

Table 1 above shows how much land is currently farmed on each parcel. A portion of this land will be converted to generate credits for this water quality trade. The unfarmed acreage, which will not be converted to grassland for use in the water quality trade, is made up of some areas of trees and ditches and the BelGioioso production facility. One (1) acre of the previously farmed acreage in Field C2 will be set aside for the WWTP construction and will not be used for the water quality trade.

The previously farmed acreage at BelGioioso has been cropped primarily for purposes of land application of industrial liquid wastewater. As such, cropping rotations have been a function of time of year that planting can occur due to land application restrictions rather than following typical crop rotation practices which might be used for strictly agricultural purposes. There is no drain tile present on the site.

3.2 Soil Sampling

Soil samples were taken on June 28, 2017 for three fields (A1, B, C2) located on the BelGioioso properties. At the request of WDNR based on preliminary review of water quality trade modeling, soil samples were done a second time on November 13, 2017 to confirm results. Phosphorus results from both sample dates were higher than would be typical for agricultural application because portions of these fields have historically been used for land application. Variability between the two sample dates is also likely due to the amount of time between land application and sample collection.

A NRCS soils map of the three fields is given in Attachment B and soil sample results from both dates, as well as an average of the two sample dates is given in Attachment D. A map of the sample locations is also included with the results in Attachment D. The average values were used to calculate the current and future potentially tradeable phosphorus for the water quality trade. Results of the SnapPlus reports using these average soil conditions can be found in Attachments E and F.

3.3 Modeled PTP Under Current Conditions

SnapPlus V2 (version 16.3.16306.1328) was used to model the three fields under current conditions. The three fields had all seen identical cropping in 2014, 2015, and 2016: Soybeans from 2013, Soybeans, and Corn Grain, respectively. The fields also had the following fertilizer applications:

- 2014: N/A
- 2015: N/A
- 2016: 250 lbs/acre 20/9/20 fertilizer

These fields have been cropped primarily for the purpose of land application at BelGioioso. In addition to fertilizer application to ensure healthy crops, industrial liquid wastewater has been applied on portions of Fields A1 and B (25 acres total) in each of the previous three years in the amounts shown in Table 2 below.

Table 2: Land Application on AC/1 (Proposed Trade Fields A1 & B)

Year	Acres Land Applied	Amount of Waste [gal]	Assumed P[1] [mg/L]	Assumed P [lbs/yr]	Assumed P [lbs/ac/yr]	Applied N [lbs/ac/yr]
2014	25	2,123,000	56	991.5	39.7	1.33
2015	25	2,200,000	56	1,027.5	41.1	1.50
2016	25	1,215,500	56	567.7	22.7	1.75
2017	25	275,000	56	128.4	5.1	5.27

1. Since phosphorus monitoring was not required for land applied wastes until 2018, an assumed phosphorus concentration was used. This value was used in the basis of design for the design of the WWTP and is based on Probst's past experience with similar dairy wastewater streams.

The fields were not land applied as heavily in 2017, since the fields were getting ready for conversion to natural prairie. Therefore for the purposes of SnapPlus modeling, the average of years 2015 and 2016 were used as an average application rate of 68,310 gallons/acre/yr for future years.

Attachment C includes information regarding existing farming practices including a completed Existing Farming Practices (EFP) questionnaire completed by BelGioioso with their farmer as well as maps from NRCS CropScape which confirm the crops that were grown. This cropping and application data was modeled as a 3-year rotation through the year 2023.

There were a few deviations in the modeling from the CropScape maps because the farmer would not have planted different crops on each field. Deviations are as follows:

- **2014:** The CropScape map shows that Fields A1 and B were dry beans while Field C2 was corn. This was modeled as dry beans for all fields.
- **2015:** The CropScape map shows of mix of alfalfa and soybeans on all three fields. Only one crop was planted and it was soybeans.
- **2016:** The CropScape map accurately shows that corn was planted on all three fields.
- **2017:** The CropScape map shows that the fields were fallow. This would have been the case if the crop rotation had continued, but because BelGioioso was preparing for planting of the permanent grassland, they planted oats late in the year. The CropScape map was likely based on mid-growing season conditions before the oats were planted.

Attachment E includes the following SnapPlus reports assuming current cropping practices continued into the future:

- Narrative and Crop Report
- Soil Test Report
- Application Summary Report
- Manure Tracking Report
- Fields Data and 590 Assessment Plan

- Nutrient Management Report
- P Trade Report

Table 3 summarizes the Potentially Tradeable Phosphorus (PTP) from the P Trade Report using the current crop and application rotation:

Table 3
SnapPlus Potentially Tradable Phosphorus Report - Current

		Acres	2018	2019	2020	2021	2022	2023
No Land App	Field A1	6.5	45.20	62.61	38.04	44.66	61.98	37.65
	Field B	18.5	89.62	126.03	73.80	88.19	124.33	72.67
	Field C2	13.2	24.97	39.85	15.75	24.15	38.86	15.02
	SUB TOTAL	38.2	159.78	228.49	127.59	156.99	225.16	125.35
Land App Only	Field A1	6.5	18.69	19.40	16.22	20.60	21.65	17.65
	Field B	18.5	57.07	59.27	49.55	62.52	65.43	53.71
	Field C2	13.2	0.00	0.00	0.00	0.00	0.00	0.00
	SUB TOTAL	38.2	75.75	78.66	65.78	83.12	87.08	71.35
Total	Field A1	6.5	63.88	82.01	54.27	65.26	83.62	55.30
	Field B	18.5	146.68	185.30	123.35	150.70	189.76	126.38
	Field C2	13.2	24.97	39.85	15.75	24.15	38.85	15.02
	TOTAL	38.2	235.54	307.16	193.37	240.11	312.24	196.70

3.4 Modeled PTP with Proposed Permanent Grassland

The fields were then modeled by replacing the current crop rotation with a permanent grassland, not harvested. Rather than keeping the field idle in 2017 which would have followed the previous crop rotation, BelGioioso planted a cover crop of oats in the Fall of 2017 to prepare the field for permanent vegetation conversion in Spring of 2018. The yield on this crop was zero as it was left in the field over winter, however SnapPlus does not allow for zero yield so the smallest yield of 30-60 was selected. There was no fertilizer or manure application for this application and the fields were fall chiseled, disked. This cover crop planting did not impact the credits available beginning in 2018.

The same SnapPlus reports as were done for the current crop rotation are available for the permanent grassland modeling in Attachment F. Table 4 below summarizes the Potentially Tradable Phosphorus (PTP) given in the P Trade Report for future conditions with permanent grassland, not harvested.

Table 4
SnapPlus Potentially Tradable Phosphorus Report – Permanent Grassland, not harvested

		Acres	2018	2019	2020	2021	2022	2023
No Land App	Field A1	6.5	19.67	15.97	14.78	14.12	13.82	13.63
	Field B	18.5	38.06	30.78	28.48	27.20	26.61	26.26
	Field C2	13.2	6.77	4.78	4.33	4.10	4.00	3.94
	SUB TOTAL	38.2	64.50	51.54	47.60	45.43	44.42	43.83
Land App Only	Field A1	6.5	0.84	0.67	0.62	0.59	0.58	0.57
	Field B	18.5	2.55	2.07	1.92	1.84	1.80	1.77
	Field C2	13.2	0.00	0.00	0.00	0.00	0.00	0.00
	SUB TOTAL	38.2	3.39	2.74	2.54	2.43	2.38	2.35
Total	Field A1	6.5	20.51	16.64	15.40	14.72	14.39	14.21
	Field B	18.5	40.61	32.85	30.40	29.04	28.41	28.03
	Field C2	13.2	6.77	4.78	4.33	4.10	4.00	3.94
	TOTAL	38.2	67.89	54.28	50.14	47.86	46.80	46.18

3.5 Calculation of Change in PTP Based on Modified Land Use

Based on the change in land use from cropped agricultural land in corn and soybeans to a permanent grassland, not harvested, total PTP was then calculated. Table 5 is a calculation of the difference of the values in Tables 3 and 4 above. This table does not incorporate the trade ratio which is discussed further in Section 4 of this report. The trade ratio must be included to determine final credits generated.

Table 5
Calculated Potentially Tradable Phosphorus – Permanent Grassland, not harvested

		Acres	2018	2019	2020	2021	2022	2023
No Land App	Field A1	6.5	25.52	46.64	23.26	30.53	48.16	24.02
	Field B	18.5	51.55	95.25	45.31	60.98	97.72	46.42
	Field C2	13.2	18.20	35.07	11.42	20.05	34.86	11.08
	SUB TOTAL	38.2	95.28	176.96	79.99	111.57	180.74	81.52
Land App Only	Field A1	6.5	17.85	18.73	15.60	20.01	21.07	17.08
	Field B	18.5	54.52	57.20	47.63	60.68	63.63	51.93
	Field C2	13.2	0.00	0.00	0.00	0.00	0.00	0.00
	SUB TOTAL	38.2	72.37	75.92	63.23	80.69	84.70	69.01
Total	Field A1	6.5	43.37	65.37	38.86	50.54	69.23	41.09
	Field B	18.5	106.07	152.44	92.94	121.66	161.36	98.35
	Field C2	13.2	18.20	35.07	11.42	20.05	34.86	11.08
	TOTAL	38.2	167.65	252.88	143.23	192.26	265.44	150.52

4 Trade Ratio Calculation

The PTP generated by the SnapPlus modeling is adjusted by the applicable trade ratio to determine the amount of credits the credit user can receive for the management practice. As described in WDNR's "Guidance for Implementing Water Quality Trading in WPDES Permits" dated August 21, 2013 ("WQT Guidance"), the trade ratio is the sum of the delivery, downstream, equivalency, and uncertainty factors less any habitat adjustment factor. The trade ratio can be summarized as:

Trade Ratio = (Delivery + Downstream + Equivalency + Uncertainty – Habit Adjustment):1

See WQT Guidance at Section 2.11. For trades between point sources and nonpoint sources, there is a minimum trade ratio of 1.2:1. See WQT Guidance at Section 2.11.6.

As described in further detail by factor below, BelGioioso's management practice results in the minimum trade ratio of 1.2:1.

4.1 Individual Trade Ratio Factors

4.1.1 Delivery factor:

As discussed earlier, the Fields subject to the permanent vegetative cover management practice are within the same HUC12, the North Branch Suamico River – Suamico River Subwatershed as BelGioioso Outfall 005. Because the Fields are within the same HUC12 as the Outfall, the delivery factor is not needed (i.e., it is zero). See WQT Guidance at § 2.11.1.

4.1.2 Downstream factor:

28.2 acres of the proposed trade fields are upstream of Outfall 005. Because these portions of the fields are located upstream of the Outfall, the downstream factor is not needed (i.e., it is zero). However, 10.1 acres are downstream of Outfall 005 and do require a downstream factor. See WQT Guidance at Section 2.11.2.

Calculation of the downstream factor for the 10.1 downstream acres was done using PRESTO-lite and Section 5 of the WQT Guidance. The PRESTO-lite map and associated report are included in Attachment B.

PRESTO-lite estimates the average annual nonpoint phosphorus load to be 287 lbs of phosphorus for the 416-acre subcatchment. This is equal to 0.6899 lbs/ac of phosphorus in the subcatchment. Because the land use of the 10.1 acres downstream is the same, this ratio is being used for the downstream fields as well. A map of the upstream acreage in the subcatchment can be found in Attachment B. Upstream acreage was determined using the measurement function of the Surface Water Data

Viewer. By multiplying the 380.8 upstream acres by 0.6899 lbs/ac, the total nonpoint load at the point of discharge is 262.7 lbs. BelGioioso's maximum load is expected to be 95 lbs/year. Therefore, BelGioioso's discharge load will be 36.2% of the total current load at the point of discharge. Using Section 5 of the WQT Guidance, the 10.1 acres downstream of the point of discharge will have a downstream factor of 0.2.

4.1.3 Equivalency factor:

The permanent vegetative cover management practice on the Fields will reduce phosphorus loadings to the subwatershed. BelGioioso is using the phosphorus credits generated by the permanent vegetative cover management practice to comply with the phosphorus limits on Outfall 005. Because phosphorus reductions are being used to generate phosphorus credits, an equivalency factor is not needed (i.e., it is zero). See WQT Guidance at § 2.11.3.

4.1.4 Uncertainty factor:

The Fields will be placed in permanent vegetative cover, as described in Section 6. According to Table 4 of the WQT Guidance, land in perennial vegetation that was established and is maintained consistent with NRCS Technical Standard 327 results in an uncertainty factor of 1. See WQT Guidance at § 2.11.4, Table 4.

4.1.5 Habitat Adjustment factor:

BelGioioso is not claiming any beneficial habitat adjustment, so a habitat adjustment is not needed (i.e., it is zero). See WQT Guidance at § 2.11.5.

4.2 Calculation of Trade Ratio Based on Individual Factors

Inserting the above factors into the WQT Guidance's trade ratio formula results in a trade ratio of 1.2:1:

Trade Ratio = (Delivery + Downstream + Equivalency + Uncertainty – Habit Adjustment):1

28.1 upstream acres Trade Ratio = (0 + 0 + 0 + 1 – 0):1
= 1:1

10.1 downstream acres Trade Ratio = (0 + 0.2 + 0 + 1 – 0):1
= 1.2:1

Because the minimum allowed trade ratio by WDNR is 1.2:1, BelGioioso will use a 1.2:1 trade ratio for the entire 38.2 acres for estimating credits generated by the management practice.

5 Credit Generation Calculation

For each year, the credit generated from the management practice is the difference between the PTP based on SnapPlus modeling assuming the prior crop rotation was continued and the PTP based on SnapPlus modeling assuming a permanent vegetative cover is installed and maintained on the Fields, divided by the credit ratio as shown in the equation below. Table 6 shows the results of this calculation for each field.

Phosphorus Credits Per Year = (PTP Assuming Crops Rotation Continued - PTP Assuming Permanent Vegetative Cover) ÷ trade ratio

Table 6
SnapPlus PTP (lb/acre/year) - (trade ratio of 1.2 applied)

		Acres	2018	2019	2020	2021	2022	2023
No Land App	Field A1	6.5	21.27	38.87	19.38	25.44	40.13	20.02
	Field B	18.5	42.96	79.37	37.76	50.82	81.44	38.68
	Field C2	13.2	15.17	29.22	9.52	16.71	29.05	9.24
	SUB TOTAL	38.2	79.40	147.46	66.66	92.97	150.62	67.93
Land App Only	Field A1	6.5	14.87	15.60	13.00	16.68	17.56	14.23
	Field B	18.5	45.43	47.67	39.69	50.57	53.03	43.28
	Field C2	13.2	0.00	0.00	0.00	0.00	0.00	0.00
	SUB TOTAL	38.2	60.31	63.27	52.69	67.24	70.58	57.51
Total	Field A1	6.5	36.14	54.47	32.39	42.12	57.69	34.25
	Field B	18.5	88.39	127.04	77.45	101.39	134.46	81.96
	Field C2	13.2	15.17	29.22	9.52	16.71	29.05	9.24
	TOTAL	38.2	139.71	210.73	119.36	160.21	221.20	125.44

For example, in 2018 for Field B Total:

PTP Assuming Crop Rotation Continues: 146.68 lbs P/yr (from Table 3)
PTP Assuming Permanent Vegetative Cover: 40.61 lbs P/yr (from Table 4)
Difference: 106.07 *lb P/yr* (146.68 – 40.61)*, from Table 5)*
Trade ratio: 1.2:1 (from Section 4.2)
PTP including Trade Ratio: 88.39 lbs P/yr (106.07 /1.2)

The same math applies for credits based on land application. The sum of the credits based on land application and those based on fertilizer application is the total credits generated on site.

Planting of the permanent prairie was completed in June 2018. Full establishment of the prairie is expected by September 1, 2018, so the generation of trade credits in 2018 is limited to four months of the year. Therefore, the 2018 credits shown in Table 6 have been prorated for only 4 months of 2018 in Table 7 below. This does not impact the credit generation for any other year.

Table 7
WI-0065579-01-0 Credit Availability

	Acres	2018	2019	2020	2021	2022	2023
Credits Available	38.2	46.2	210.7	119.4	160.2	221.2	125.4

6 Land Application Nutrient Management Plans

In an effort to track phosphorus throughout the entire trade, nutrient management plans will be completed for fields where WWTP liquid biosolids (aka sludge) is land applied. These plans will model the original phosphorus non-point load to surface waters before and after land application of biosolids, showing that land application of sludge does not increase phosphorus load to surface waters.

To establish a non-point phosphorus load baseline for land application of biosolids in this Water Quality Trading Report, ten (10) likely fields for land application have been modeled using SnapPlus. These fields were used for land application of raw wastewaters at an assumed rate of 68,310 gallons/acre/year. No soil samples, cropping data, tiling practices, or fertilizer/manure applications were available during the preparation of this report.

Assumptions were made based on cropping information available on CropScape, assumed soil sample results of 101 ppm P, and usual farming practices. These assumptions may overestimate baseline P loss from the fields. The nutrient management plans for these fields will be completed along with the Land Application Management Plan once this information is available and may results in less P loss than estimated in Table 8 below. The fields are listed in Table 8 along with the "baseline" PTP should land application of raw wastewaters continue as was historical.

Table 8
Land Application Fields – Potential Tradeable Phosphorus Baseline (lbs P/ac/yr)

	Acres	2018	2019	2020	2021	2022
53083	14.4	47	85	124	129	89
53084	15.2	52	94	137	143	98
53085	18.8	62	91	132	138	107
53087	21.0	160	159	159	159	159
53088	16.3	151	151	151	150	150
53089	8.0	63	69	47	30	26
53090	20.6	219	184	220	186	222
79673	27.8	247	295	249	297	250
80260	37.1	306	327	308	329	311
80261	36.2	591	408	317	482	607
TOTAL	**215.4**	**1898**	**1863**	**1843**	**2043**	**2019**

Figures 2, 3, and 4 below shows the approximate location of these fields in relation to the trade fields/outfall.

Figure 2
Location of Land Application Fields and Outfall/Trade Fields

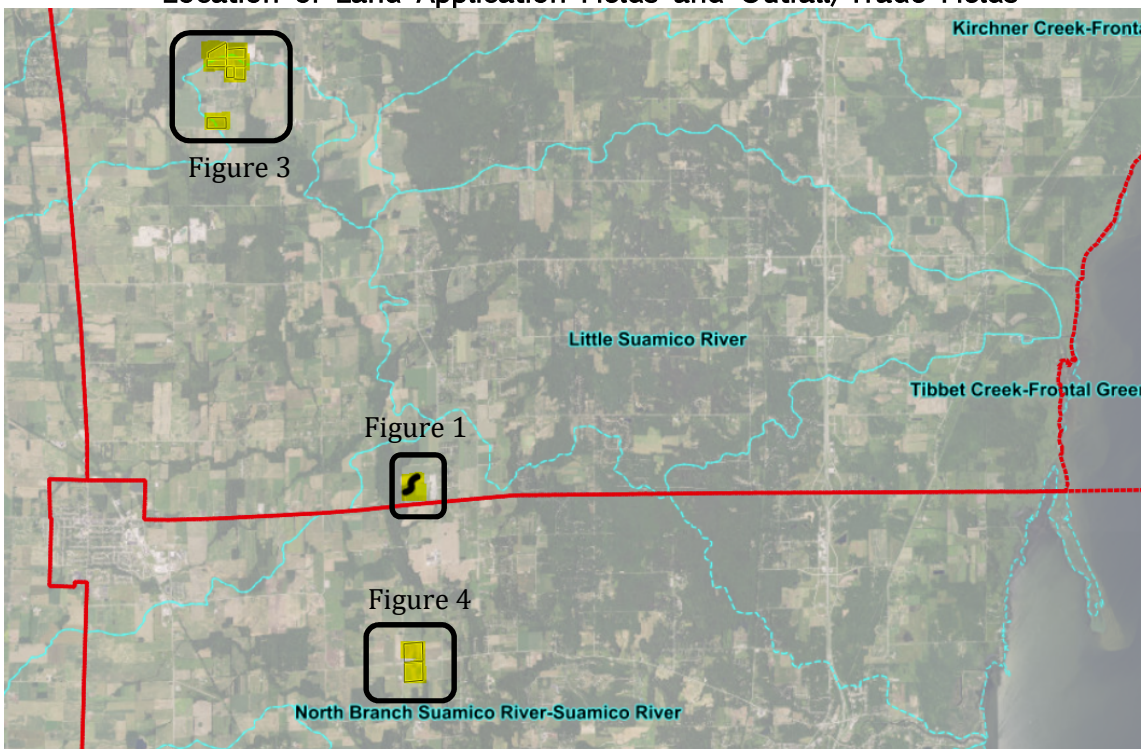


Figure 3
Location of Land Application Fields

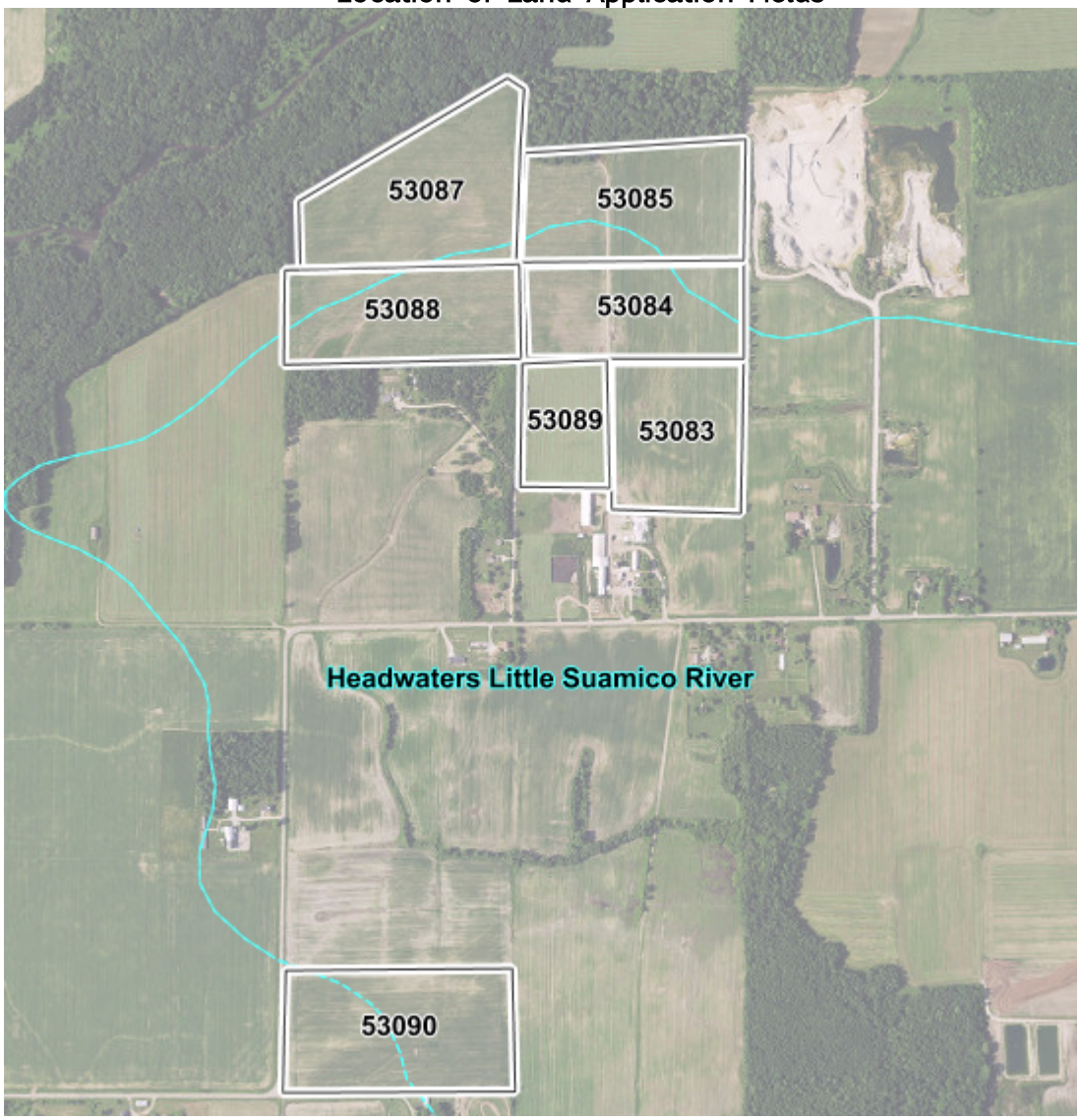


Figure 4
Location of Land Application Fields

Since phosphorus does not have a natural gaseous form, all phosphorus that enters the WWTP will either need to leave in the treated wastewater or through the biosolids byproduct. Table 9 below is a rough mass balance table for phosphorus before and after WWTP construction and phosphorus trading.

Table 9
Approximate average phosphorus mass balance (lbs P/ac/yr)

	Phosphorus (lb/yr)
CURRENT	
Raw Wastewater to Land Application[1]	24,392
NCCW to Stream	104
AFTER WWTP	
Discharge from WWTP to Stream (assumes 0.12 mg/L discharge)	177
Credits Generated from Trade (average from 2018-2013 before trade ratio)	-215
Biosolids from WWTP applied as land application[1]	24,319

[1]Note that this mass is what is land applied and NOT the phosphorus load to surface waters

7 Management Practice Description

7.1 Installation Plan

An Establishment Plan has been developed by Carl Korfmacher of Midwest Prairies and has been included as Attachment H. The plan outlines what soil preparation, seed mix, erosion control measures, and other measures are required to install the native prairie consistent with NRCS Technical Standard 327. The seed mix includes all native grasses and sedges, and wildflower forbs. The plan is specific to each field and a map is included. The plan outlines other activities that may or may not be required to establish the prairie during the first couple of months.

7.2 Operation and Maintenance Plan

A separate operations plan was also prepared by Carl Korfmacher of Midwest Prairies and has been included as Attachment I. This plan outlines regular maintenance requirements to keep the prairie healthy. It also includes other irregular activities that may be required after inspections by a prairie expert.

8 Timeline

8.1 Schedule for Construction and Initial Operation of WWTP

BelGioioso will begin constructing the Industrial Wastewater Treatment Plant in the Summer of 2018. Estimated start-up date and discharge of treated wastewater in accordance with Outfall 005 of their WPDES permit will occur in the fall or winter of 2018.

8.2 Schedule for Installation of Permanent Vegetative Practice

Date	Action
June 2018	Initial Planting of prairie (including cover crop)
July 2018	First inspection (one month after planting)
August 2018	Germination of all seed
August thru Nov 2018	Mowing and herbicide application as needed for weed control
August 2018	Second inspection
September 2018	Prairie established (bare spots greater than 100 yd^2 will be reseeded)
September 2018	BelGioioso will follow the Operation and Maintenance plan after this date. The prairie will be maintained indefinitely to maintain the water quality trade.

Between the time of the original submittal and this plan revision, BelGioioso planted the permanent vegetation as described in this plan in order to ensure that, if approved, credits would be available for use by the Fall of 2018.

9 Inspections and Reporting

9.1 Water Quality Trading Management Practice Registration

WDNR Practice Registration Form 3400-207 for Water Quality Trading Management Practice Registration ("Practice Registration Form") has been included in Attachment G.

9.2 Monthly Certification

Each month, BelGioioso will inspect the Fields generating the phosphorus reduction credits to confirm continued cover of the permanent vegetative management practices. If during these inspections any attention is needed to the permanent vegetative management practice, the issue will be addressed immediately. Any photos taken during these inspections can be used to supplement the annual inspections described further in Section 8.3.

Each month, BelGioioso shall also certify that the permanent vegetative cover management practice installed to generate phosphorus reduction credits is operated and maintained in a manner consistent with that specified in this Water Quality Trading Plan or a statement noting noncompliance with this Plan. A certification of compliance may be made by including the following statement as a comment on the monthly discharge monitoring report (DMR):

> I certify that to the best of my knowledge the management practice identified in the approved water quality trading plan as the source of phosphorus reduction credits is installed, established and properly maintained.

Usage and reporting of phosphorus credits will also occur on a monthly basis and be submitted on the DMRs.

9.3 Annual Inspections

Once per year, BelGioioso's prairie restoration consultant will inspect the Fields generating the phosphorus reduction credits to confirm implementation of the permanent vegetative cover management practice and that the management practice is being appropriately maintained. This annual inspection shall occur between mid-August and mid-September each year and shall include at least one photograph of each of the Fields; one overall site photo, and one close-up photo of a representative area of the field.

9.4 Notification of Problems with Cover Management Practice

In accordance with the Operation and Maintenance Plan, BelGioioso will notify the regional WDNR wastewater compliance staff verbally within 24 hours of becoming aware that the phosphorus reduction credits used or intended for use by BelGioioso are not

being implemented or generated as set forth in this Water Quality Trading Plan. Additionally, within five (5) days of becoming aware of noncompliance, written notification will be provided to the regional WDNR wastewater compliance staff. Both notifications will include the nature of the noncompliance, a description of how the issues will be addressed, and an appropriate timeline to address the issues. BelGioioso shall work to rectify such problems in accordance with the Operation and Maintenance Plan.

9.5 Annual Water Quality Trading Report

BelGioioso shall report to WDNR by January 31 of each year the following:

- The number of phosphorus reduction credits (lbs/month) used each month of the previous year to demonstrate compliance;
- Photographs from the annual inspection of the permanent vegetative cover management practice that generated the phosphorus reduction credits used during the previous years;
- Identification of noncompliance or failure to implement any terms or conditions WPDES permit WI-0065579-01 with respect to water quality trading that have not been reported in discharge monitoring reports; and
- SnapPlus Nutrient Management Plan report of all fields receiving land applied waste (WWTP biosolids) to demonstrate that there has not been overloading of any field as a result of this trade. Land application management plans will be updated annually.

9.6 WDNR Right to Inspect the Fields

WDNR has the right to inspect the permanent vegetative cover management practice at any time upon giving reasonable notice to BelGioioso to ensure the management practice is in compliance with the NRCS Technical Standard 327 and the terms of this Plan.

10 Compliance with Water Quality Trading Checklist

This Water Quality Trading Plan complies with the Water Quality Trading Checklist in Table 8 set forth at page 37 of the WQT Guidance. BelGioioso's water quality trade must comply with the requirements for Credit Source (e) in Table 8. Credit Source (e) includes sources where "credits are obtained from a construction project or implementation of a plan undertaken by the credit user for sources other than that covered by the credit user's WPDES permit." BelGioioso will be installing permanent vegetative cover on the Fields, which are not currently covered by their WPDES permit.

Below is a list of the elements of a Water Quality Trading plan for credit sources classified as (e) under Table 8 and references the section of this Water Quality Trading Plan in which each element is addressed:

- Permittee's/credit user's WPDES permit number. BelGioioso WPDES permit number is WI-0065579-01 and is included in Section 2.1.
- Permittee's/credit user's contact information. BelGioioso contact information is included in Section 10.
- Pollutant(s) for which credits will be generated. Credits will be generated for phosphorus as discussed in Section 2.1.
- Amount of credits available from each location/management practice/local governmental unit when acting as a broker. The amount of credits generated per year by installing and maintaining permanent vegetative cover on the Fields is set forth in Table 7 in Section 5.
- Certification that the content of the trading application is accurate and correct. Certification that the content of this trading application is accurate and correct is included in Section 10.
- Signature and date of signature of permittee's/credit user's authorized representative. BelGioioso authorized representative's signature and date of signature is included in Section 10.
- Location(s) where credits will be generated (e.g., map of field or site where management practice will be applied including major drainage way(s) from the project). Maps indicating the location of the Fields and Outfall 005 are included in Section 2.4 and in Attachment B.
- Identification of method(s) including management practice(s) that will be used to generate credits at each location. The management practice applied to the Fields is permanent vegetative cover consistent with NRCS Technical Standard 327 and is explained in Section 6 and Attachments H and I.
- Duration of agreement (e.g., the design life of the management practice) with each credit generator. The design life of the permanent vegetative management practice is perpetual as described in Section 7.
- Schedule for installation/construction of each management practice. The schedule for installation of the permanent vegetative practice is included in Section 7.2.

- Operation and maintenance plan for each management practice used to generate credits. The operation and maintenance plan for the permanent vegetative cover management practice is summarized in Section 6.2 and included in full in Attachment I.
- Date when credits become available for each management practice (i.e., when practice is established and effective). The date when credits become available is September 1, 2018 and is referenced in Section 7.
- Model(s) used to derive the amount of credits. The model used to derive the amount of credits is SnapPlus V2 version 16.3 as referenced in Section 3.
- The applicable trade ratio for each for each management practice including supporting technical basis (see Table 4 on p. 20 of WQT Guidance). The applicable trade ratio is 1.2:1 and the technical basis and calculation of the trade ratio is included in Section 4.

11 Certification of Water Quality Trade Report

The undersigned hereby certifies that this Water Quality Trade Report is, to the best of his knowledge, accurate and correct.

BELGIOIOSO CHEESE INC – CHASE, WI.

By:

_____

Gustavo Badino

920-863-2123
4200 Main Street
Green Bay, WI 54311

ATTACHMENT A

Notice of Intent (NOI) to Conduct Water Quality Trading

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Notice of Intent to Conduct Water Quality Trading

Form 3400-206 (1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., and ch. NR 217 Wis. Adm. Code, this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
BelGioioso Cheese Inc. - Chase	WI- 0065579-01	

Facility Address	City	State	ZIP Code
7700 N Brown County Line Road	Pulaski	WI	54162

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Lynn Morrison - Probst Group	17035 W Wisconsin Ave Suite 120	Brookfield	WI	53005

Project Name
BelGioioso Chase New WWTP

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Unnamed Trib WBIC 5014649	Total Phosphorus	040301030205

Is the permittee in a point or nonpoint source dominated watershed?
(See PRESTO results - http://dnr.wi.gov/topic/surfacewater/presto.html)

- ○ Point source dominated
- ◉ Nonpoint source dominated

Credit Generator Information

Credit generator type (select all that apply):

- ☐ Permitted Discharge (non-MS4/CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☒ Agricultural nonpoint source discharge
- ☐ Other - Specify: _____

Are any of the credit generators in a different HUC 12 than the applicant?

- ○ Yes; HUC 12: _____
- ◉ No
- ○ Unsure

Are any of the credit generators downstream of the applicant?

- ◉ Yes
- ○ No
- ○ Unsure

Will a broker/exchange be used to facilitate trade?

- ○ Yes; Name: _____
- ◉ No
- ○ Unsure

Point to Point Trades (Traditional Municipal / Industrial Discharge, MS4, CAFO)

Discharge Type	Permit Number	Name	Contact Address	Is the point source credit generator currently in compliance with their permit requirements?
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure

Point to Nonpoint Trades (Non-permitted Agricultural, Non-Permitted Urban, etc.)

List the practices that will be used to generate credits:

Conversion of cropped agricultural land to natural prairie with portions of parcels 012353502544A, 012353502142B, and 012353502443C in Oconto County inn the Town of Chase, WI owned by BelGioioso Cheese Inc.

Method for quantifying credits generated:
- ☐ Monitoring
- ☒ Modeling, Names: SnapPlusV2 16.3
- ☐ Other: _____

Projected date credits will be available:

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

Signature of Preparer	Date Signed

Authorized Representative Signature

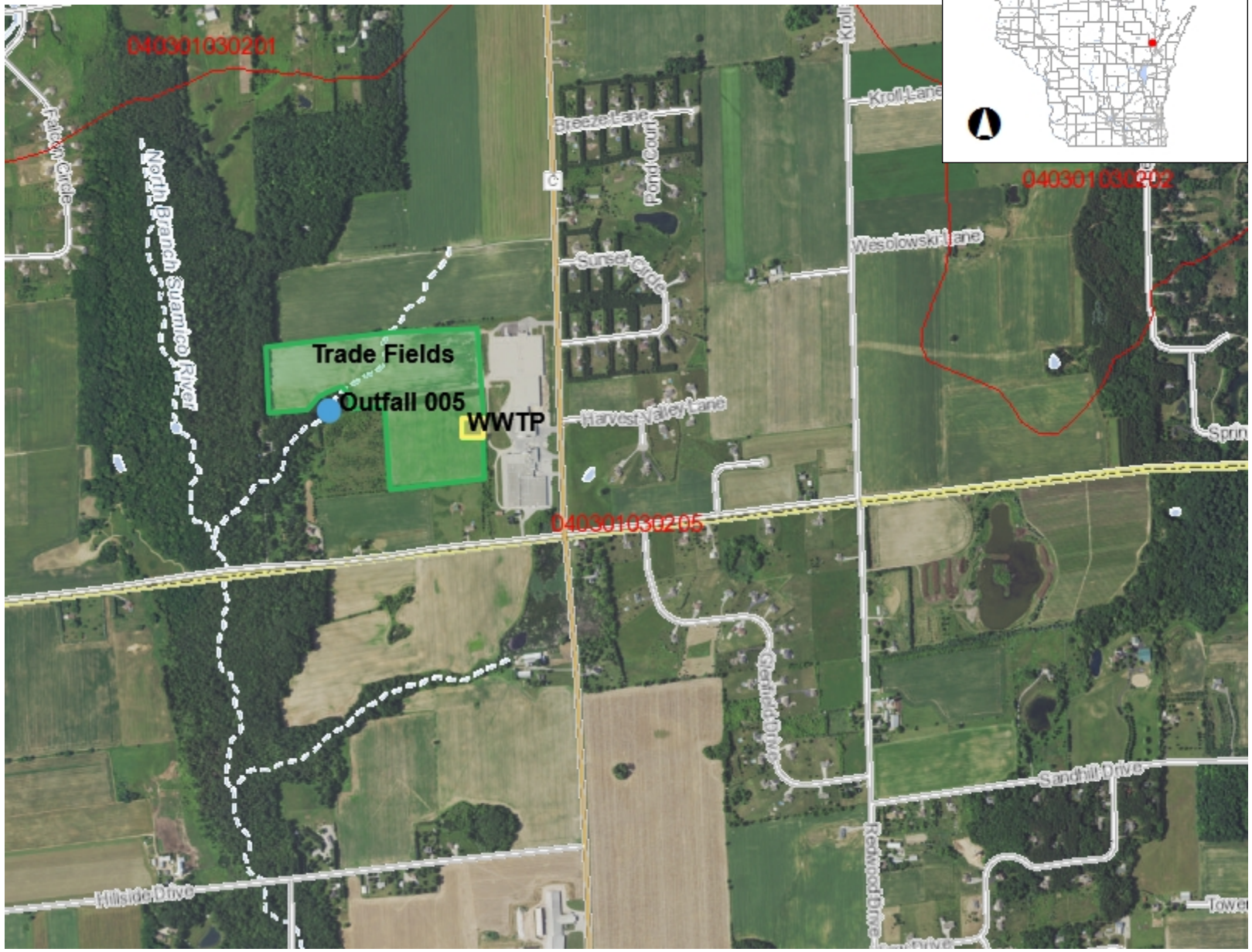
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed

ATTACHMENT B

Watershed, Subwatershed, and Field Maps

BelGioioso Chase WQT Subwatershed Map



Legend

- 12-digit HUCs (Subwatersheds)
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water

Notes

0.5 0 0.25 0.5 Miles

NAD_1983_HARN_Wisconsin_TM

1: 15,840

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

BelGioioso Chase Property

Parcel ID: 012353502544A

School District:	PULASKI	Other Districts:	
Assessed Acreage:	37.910	Land Value:	$0
Primary Owner:	AURICCHIO CHEESE INC N/K/A BELGIOIOSO CHEESE INC	Improvement Value:	$0
		Section:	SEC35-T26N-R19E
Address:	4200 MAIN ST	Volume/Page:	1577-372
	GREEN BAY, WI 54311-1	Document Number:	655750

Physical Address: 7700 N BROWN CTY LINE RD

Legal Description: E1/2 OF SE S E EXC V714-P287 N/K/A PRT SESE&NESE AS DES IN V1577-P372 1577-372 655750

Oconto County Land Information Systems makes every effort to produce the most current and accurate information possible. No warranties, expressed or implied, are provided for the data provided, its use, or its interpretation. Oconto County does not guarantee the accuracy of the material contained herein and is not responsible for any misuse or misrepresentation of this information or its derivatives. Oconto County parcel maps are for tax and real property listing purposes only and do NOT represent a survey.

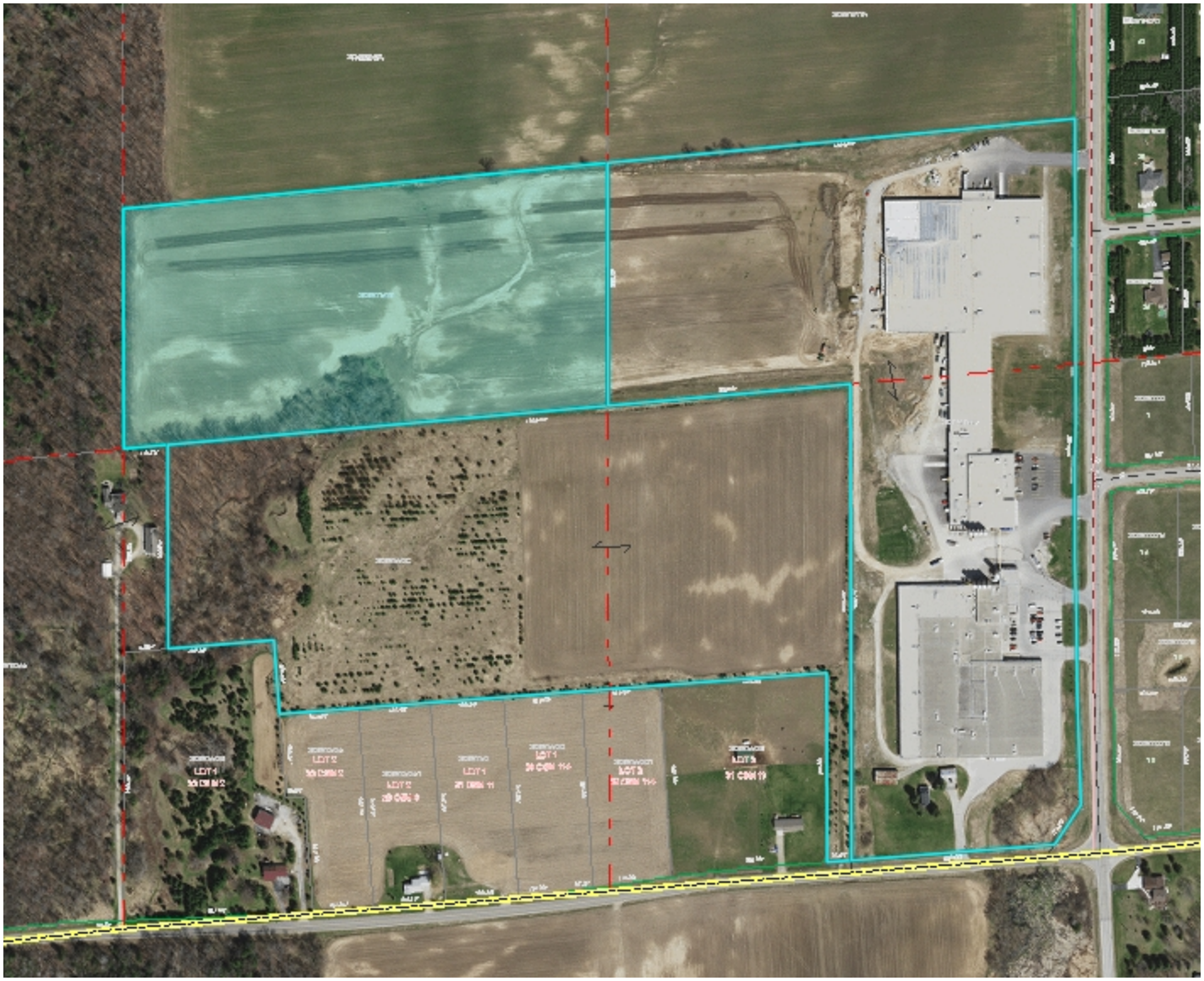
N

Report Created At 5/14/2018 11:16 AM

BelGioioso Chase Property

Parcel ID: 012353502142B

School District:	PULASKI	Other Districts:	
Assessed Acreage:	20.000	Land Value:	$0
Primary Owner:	AURICCHIO CHEESE INC N/K/A BELGIOIOSO CHEESE INC	Improvement Value:	$0
Address:	4200 MAIN ST GREEN BAY, WI 54311-1	Section:	SEC35-T26N-R19E
		Volume/Page:	603-826
		Document Number:	
Physical Address:			
Legal Description:	S1/2 OF NW S E 603-826 781-375		



Oconto County Land Information Systems makes every effort to produce the most current and accurate information possible. No warranties, expressed or implied, are provided for the data provided, its use, or its interpretation. Oconto County does not guarantee the accuracy of the material contained herein and is not responsible for any misuse or misrepresentation of this information or its derivatives. Oconto County parcel maps are for tax and real property listing purposes only and do NOT represent a survey.

N

Report Created At 5/14/2018 11:13 AM

BelGioioiso Chase Property

Parcel ID:	012353502443C		
School District:	PULASKI	Other Districts:	
Assessed Acreage:	32.000	Land Value:	$19,900
Primary Owner:	BELGIOIOSO CHEESE INC	Improvement Value:	$0
Address:	4200 MAIN ST	Section:	SEC35-T26N-R19E
	GREEN BAY, WI 54311-	Volume/Page:	1592-835
Physical Address:	N BROWN CTY LINE RD	Document Number:	659367

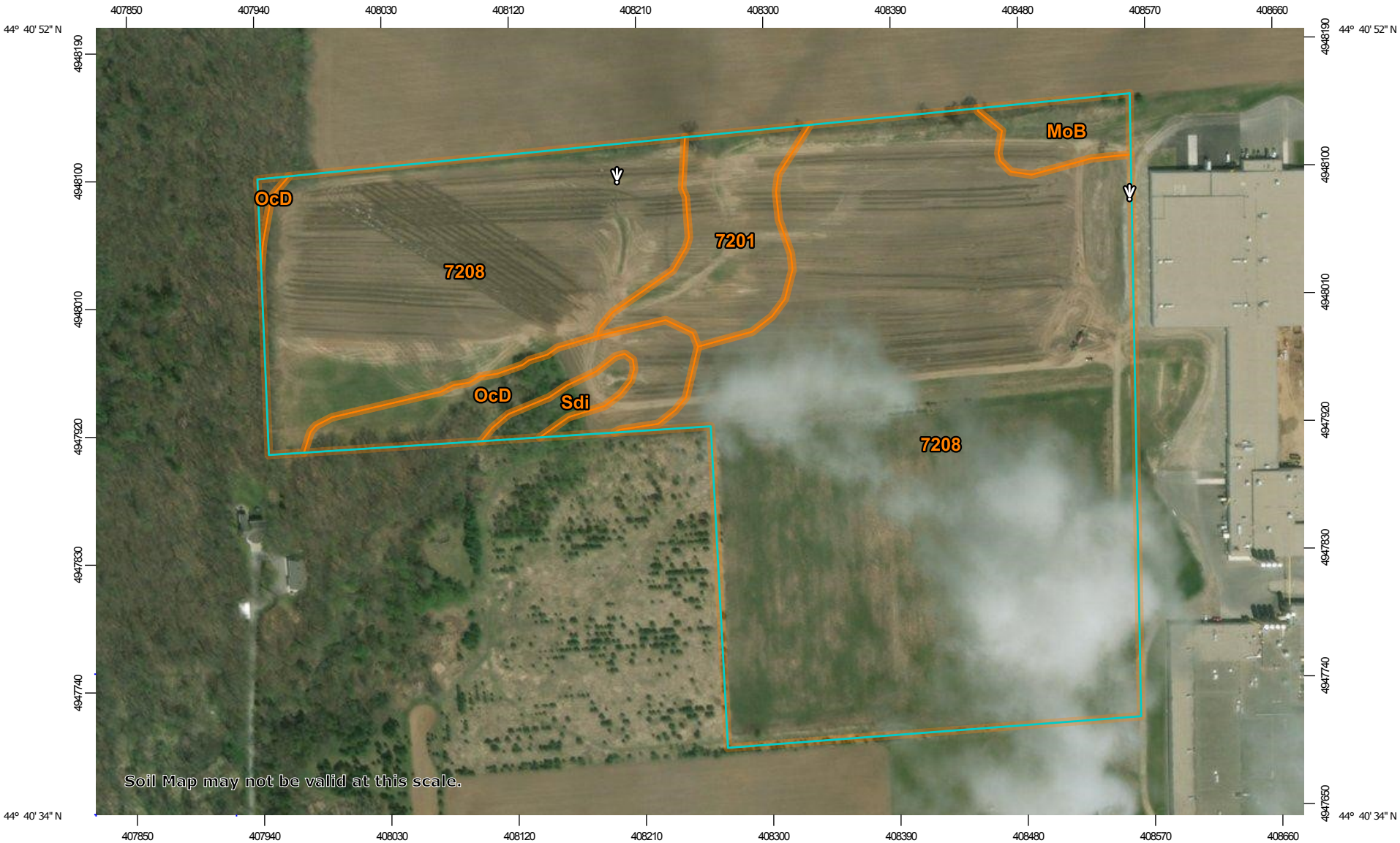
Legal Description: PRT SWSE &SE SE COM S1/4 COR TH N750'POB ETC.AS IN V787-P456.EXC V1174-P632 .
1592-835 659367

Oconto County Land Information Systems makes every effort to produce the most current and accurate information possible. No warranties, expressed or implied, are provided for the data provided, its use, or its interpretation. Oconto County does not guarantee the accuracy of the material contained herein and is not responsible for any misuse or misrepresentation of this information or its derivatives. Oconto County parcel maps are for tax and real property listing purposes only and do NOT represent a survey.

N

Report Created At 5/14/2018 11:15 AM

Soil Map—Oconto County, Wisconsin
(BelGioioso Chase Trade)



Map Scale: 1:3,900 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

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

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

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

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

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

Soil Survey Area: Oconto County, Wisconsin
Survey Area Data: Version 14, Oct 6, 2017

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

Date(s) aerial images were photographed: Dec 31, 2009—Oct 24, 2016

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

Map Unit Legend

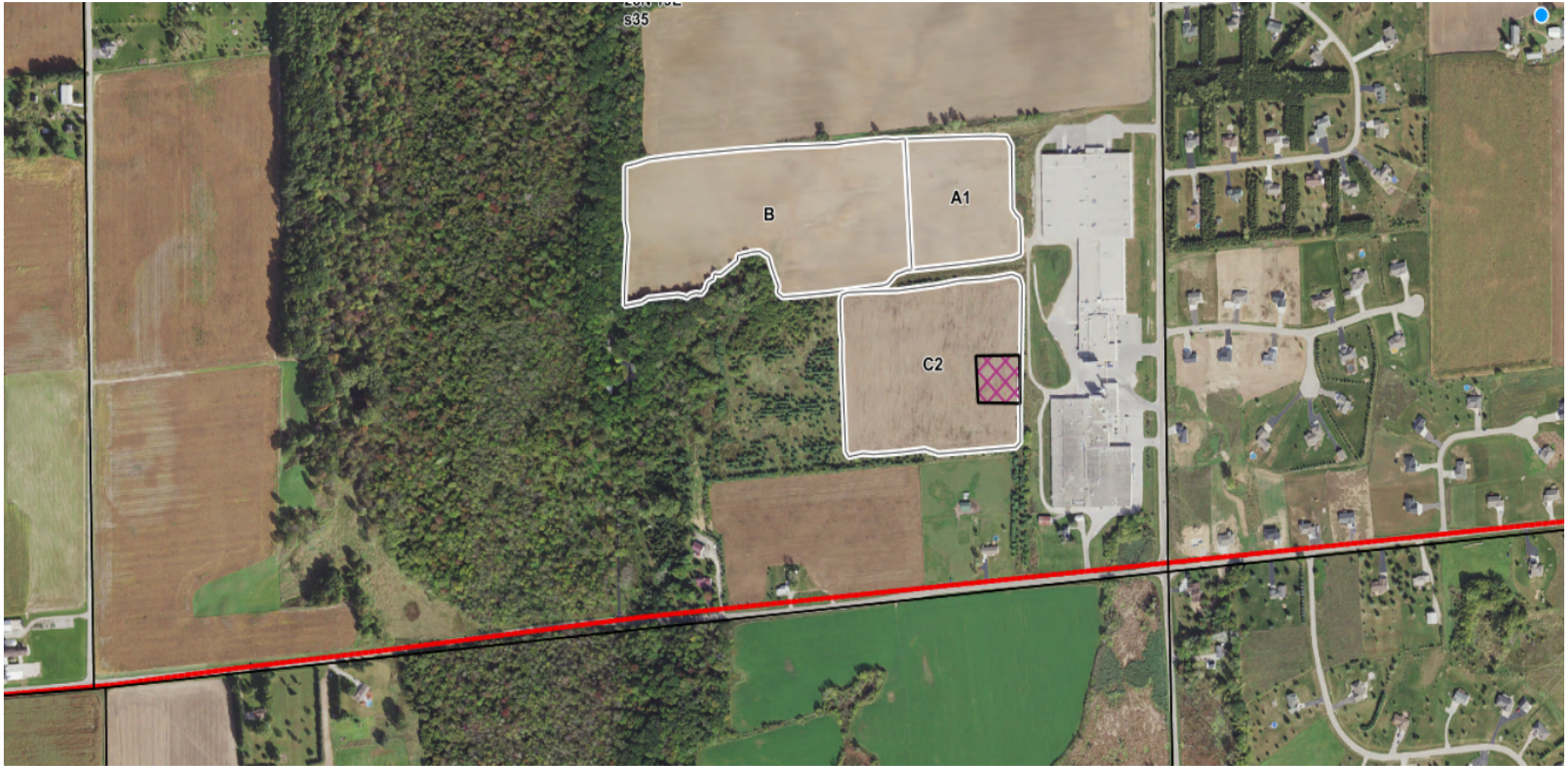
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7201	Onaway fine sandy loam, moraine, 6 to 12 percent slopes, eroded	2.9	6.0%
7208	Onaway-Ossineke fine sandy loams, moraine, 1 to 6 percent slopes	40.6	84.8%
MoB	Menominee loamy fine sand, 2 to 6 percent slopes	1.1	2.3%
OcD	Oconto fine sandy loam, 12 to 20 percent slopes	2.7	5.7%
Sdi	Seelyeville and Markey mucks, interdrumlin, 0 to 1 percent slopes	0.6	1.2%
Totals for Area of Interest		**47.9**	**100.0%**

Chase Trade Fields

Farm Name: BelGioioso Chase

Is this a CAFO: False

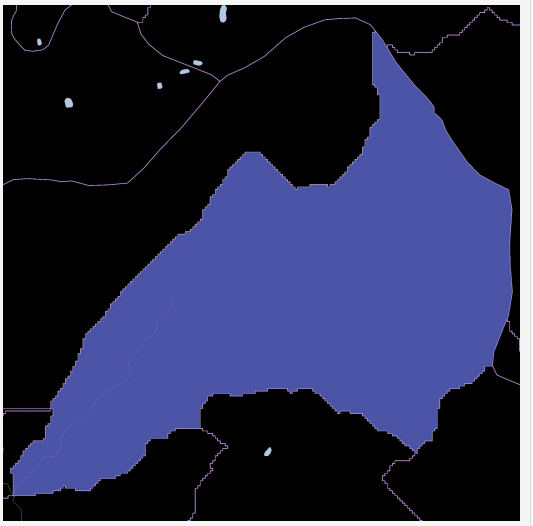
Map generated on: 2/26/2018 SnapMap Version: 16.0, Crop year: 2018



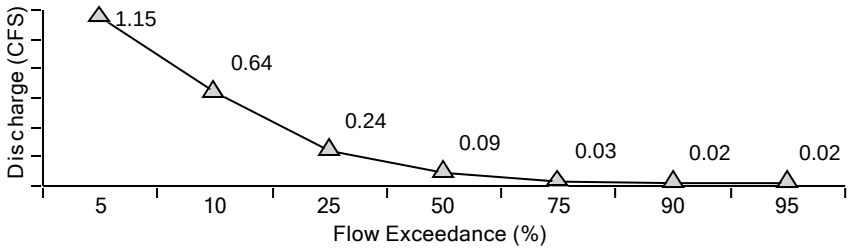
- Counties
- Township/Range
- Fields
- Tile lines
- Not farmed
- Grass filter area
- Vegetated buffer
- Non-metallic mine
- Water
- Sinkhole/other karst feature
- Other
- Designed grassed waterway
- Permanent vegetated channel
- Unvegetated ephemeral channel
- Drainage ditch
- Gully
- Point buffers
- Drinking Well
- Well
- Irrigation Well
- Sinkhole
- Non-metallic mine
- Fractured bedrock at surface
- Other direct conduit
- Tile outlet
- Tile inlet
- County Defined Karst Features

PRESTO-Lite Watershed Delineation Report

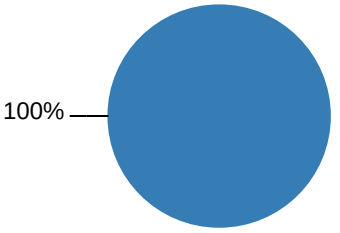
Reach ID: 200119689	
Watershed Name: North Branch Suamico River-Suamico River	
Waterbody Name: Unnamed	
HUC08: Pensaukee River	
Watershed Area: 0.65 mi²	
Average Annual Precipitation: 30.35in	



Stream Flow

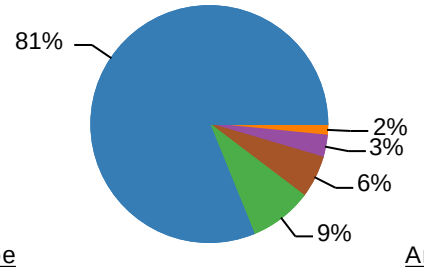


Tributary Stream Type



Type	Length
Macroinvertebrates	1093 ft
Coldwater	0 ft
Cool-Cold Headwater	0 ft
Cool-Cold Mainstem	0 ft
Cold Headwater	0 ft
Cold Mainstem	0 ft
Large River	0 ft
Warm Headwater	0 ft
Warm Mainstem	0 ft

Landcover



Type	Area
Agriculture	0.52 mi²
Urban	0.05 mi²
Forest	0.04 mi²
Wetland	0.02 mi²
Barren	0.01 mi²
Grassland	0.01 mi²

PRESTO Phosphorus Load Estimate

Avg. Annual Nonpoint Phosphorous Load (80% Confidence Interval)	287 (107 - 771) lbs
Number of Facilities (Individual Facility Information below)	0
Avg. Annual Point-source Phosphorous Load (2010 - 2012 total of all facilities)	0lbs
Most Likely Point : Nonpoint Phosphorous Ratio	0% : 100%
Low Estimate Point : Nonpoint Phosphorous Ratio (Adaptive Management)	0% : 100%

Adaptive Management Results

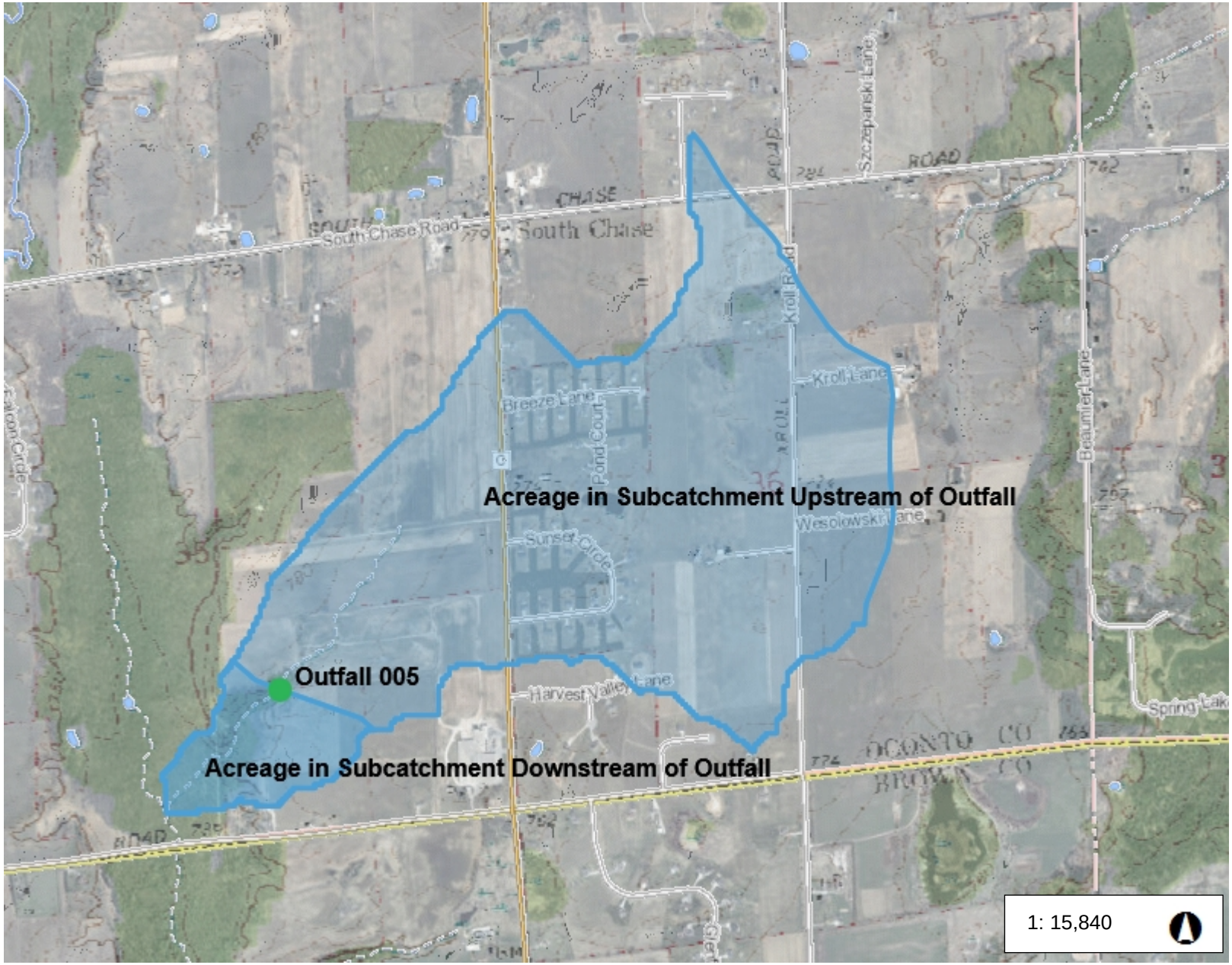
Facilities Discharging to the North Branch Suamico River-Suamico River Watershed:

Facility Name	Permit #	Outfall #	Waste Type	Receiving Water	Avg. Phosphorus Load (lbs.) (2010 - 2012)
No Facilities Found	-	-	-	-	-

Watershed Analysis Limitations

- This analysis relies on pre-defined catchments from the Wisconsin Hydrography Data-Plus and may not delineate from the exact location required. When assessing phosphorus loads for specific facility in support of efforts such as adaptive management, care should be taken to ensure that additional downstream point sources do not exist. For adaptive management information related to specific facilities please reference the PRESTO website http://dnr.wi.gov/topic/surfacewater/presto.html
- Delineation of watersheds is based on a topographic assessment and therefore do not account for modified drainage networks such as stormwater sewer systems and ditched agriculture.
- If a watershed requires delineation from an exact location the user may use the desktop version of PRESTO that requires ESRI ArcGIS. The PRESTO tool and default datasets can be downloaded at http://dnr.wi.gov/topic/surfacewater/presto.html
- Data sources for this report originate from the WDNR's Wisconsin Hydrography Data-Plus value-added dataset and the point and non-point source loading information including in the WDNR's PRESTO model.
- If you have questions about the report generated from the PRESTO-Lite application please contact: DNRWATERQUALITYMODELING@wisconsin.gov

BelGioioso Chase Outfall 005 Subcatchment



Legend

▲ Surface Water Outfalls

Notes

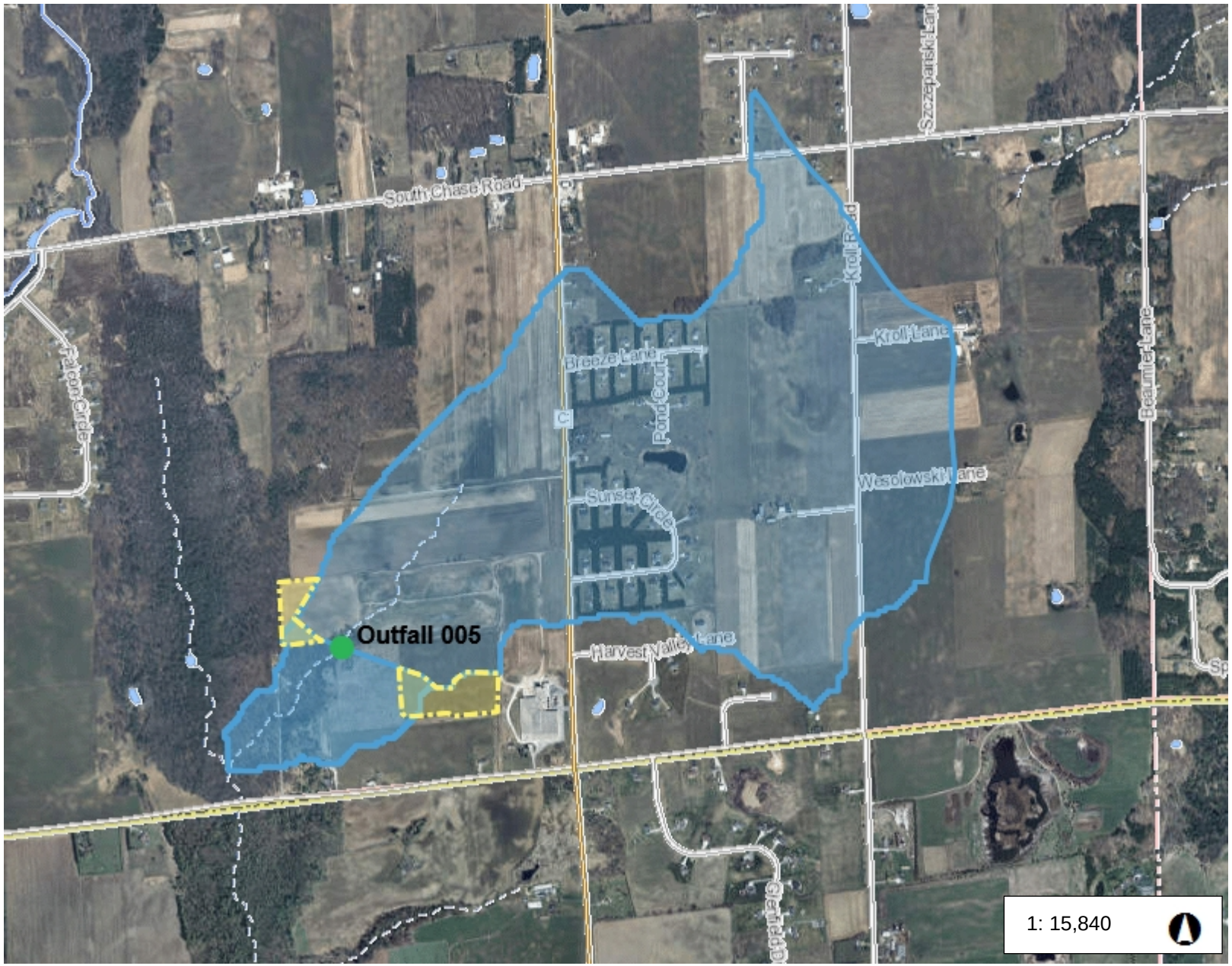
0.5 0 0.25 0.5 Miles

NAD_1983_HARN_Wisconsin_TM

© Latitude Geographics Group Ltd.

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

BelGioioso Chase Downstream Trade Fields in Yellow



Legend

▲ Surface Water Outfalls

Notes

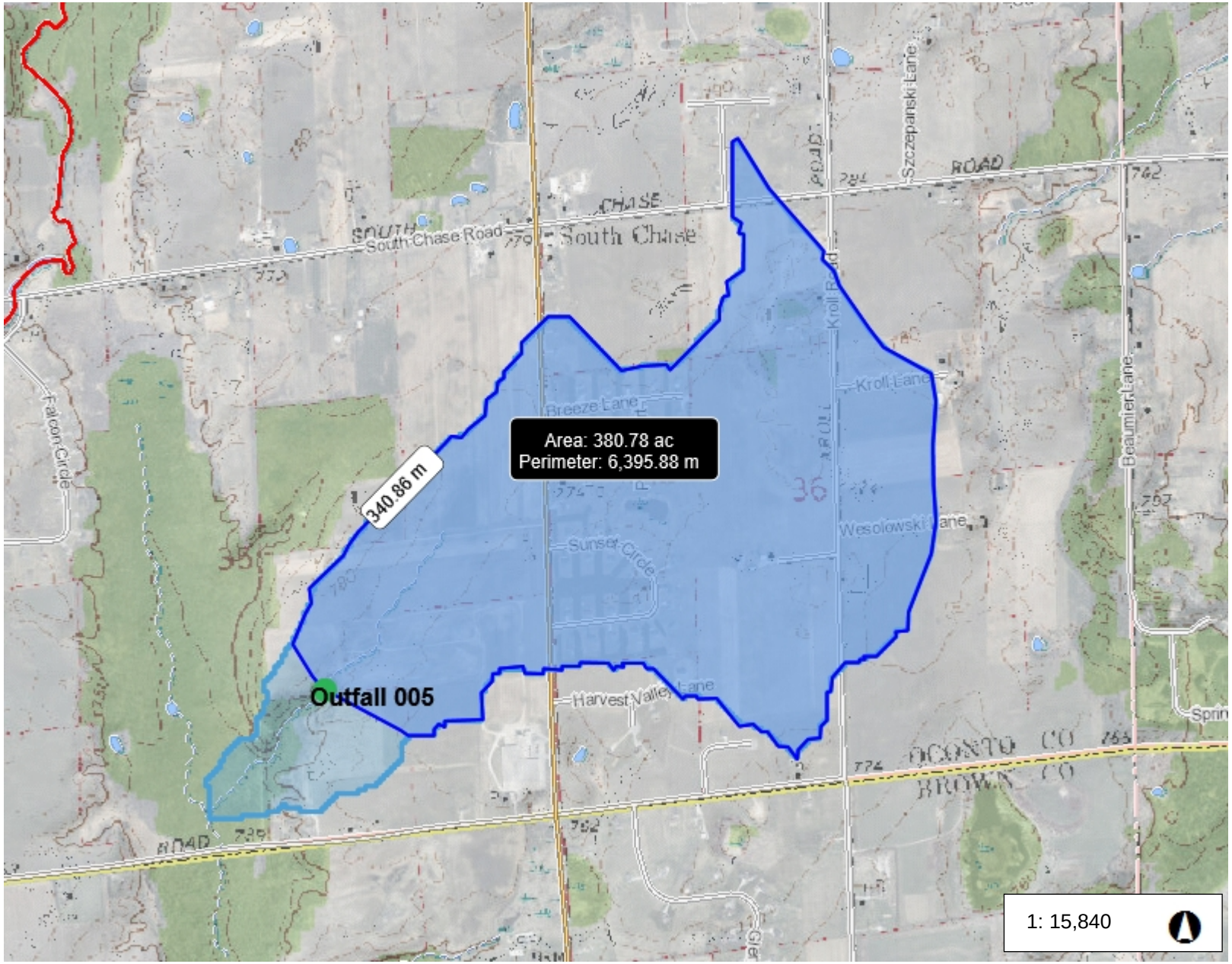
0.5 0 0.25 0.5 Miles

NAD_1983_HARN_Wisconsin_TM

© Latitude Geographics Group Ltd.

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

BelGioioso Chase Upstream Acreage



Legend

- Surface Water Outfalls
- Impaired Rivers and Streams
- Impaired Lakes

Notes

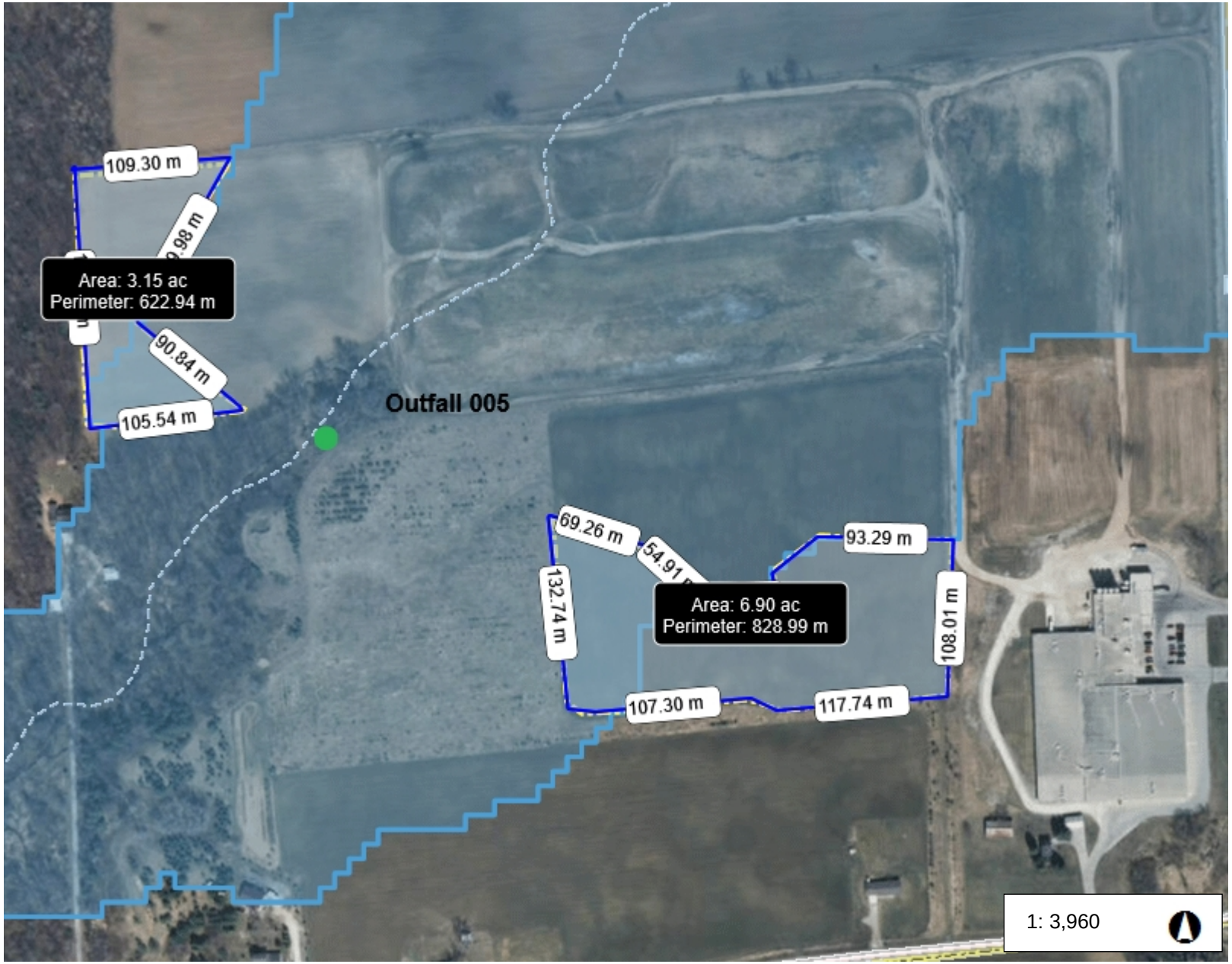
0.5 0 0.25 0.5 Miles

NAD_1983_HARN_Wisconsin_TM

© Latitude Geographics Group Ltd.

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

BelGioioso Chase Downstream Trade Fields Acreage



Legend

▲ Surface Water Outfalls

Notes

0.1 0 0.06 0.1 Miles

NAD_1983_HARN_Wisconsin_TM

© Latitude Geographics Group Ltd.

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

ATTACHMENT C

Existing Farming Practices Questionnaire

17035 W. Wisconsin Avenue, Suite 120
Brookfield, WI 53005
Phone: (262) 264-5665
Web: probstgroup.com

WATER QUALITY TRADING – FIELD QUESTIONAIRE

To: Matt Krueger – BelGioioso Cheese Inc

From: Lynn Morrison, P.E. – The Probst Group

cc: Mark Pronley, P.E. & Henry Probst – The Probst Group

Date: May 24th, 2018

BelGioioso owns 3 parcels in Oconto County, WI near the Chase production facility:

- 012353502142B 20.00 Acres
- 012353502544A 37.91 Acres
- 012353502443C 32.00 Acres

The potentially viable land to be used for Water Quality Trading is shown on the map below along with the potentially tradeable acres.

- A1 8.40 Acres
- B 20.00 Acres
- C1 9.60 Acres
- C2 15.90 Acres

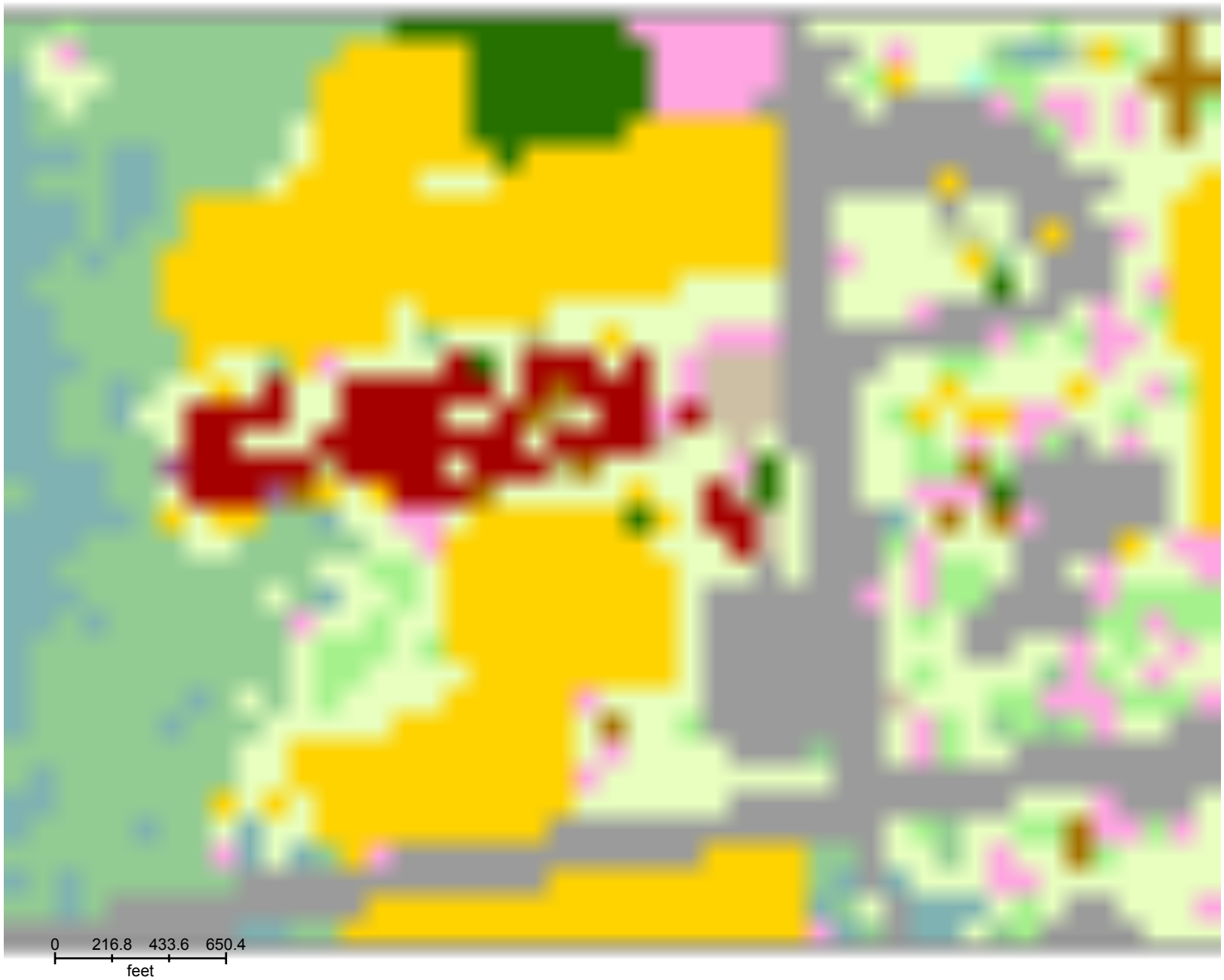
Several variables can impact the acreage required for trading. An increase in acreage converted to protective practices (prairie restoration, waterway setbacks, grassed waterways, etc) results in an increase in operational flexibility to ensure compliance with the final phosphorus limit. Based on preliminary calculations, Chase could need as little as 5 acres for a trade, but Probst would recommend considering approximately 20 acres to allow for some operational flexibility.

Field	A	B	C1	C2
Nutrient Management Plan available?	No	No	No	No
2016 crop & estimated yield	Corn – 145bu/acre	Corn – 145bu/acre	None	Corn – 145bu/acre
2015 crop & estimated yield	Soybeans – 50 bu/acre	Soybeans – 50 bu/acre	None	Soybeans – 50 bu/acre
2014 crop & estimated yield	Beans from 2013 – No Crop	Beans from 2013 – No Crop	None	Beans from 2013 – No Crop
2016 fertilizer (incl. quantity)	250#/Acre 20/9/20; Land Application 48,620 gal/ac	250#/Acre 20/9/20; Land Application 48,620 gal/ac	None	250#/Acre 20/9/20
2015 fertilizer (incl. quantity)	Land Application 88,000 gal/ac	Land Application 88,000 gal/ac	None	None
2014 fertilizer (incl. quantity)	Land Application 84,920 gal/ac	Land Application 84,920 gal/ac	None	None
2016 manure quantity	None	None	None	None
2015 manure quantity	None	None	None	None
2014 manure quantity	None	None	None	None
Is manure incorporated?	N/A	N/A	N/A	N/A
Irrigated?	No	No	No	No
2016 tilling[1]	Spring Chiseled, Disked	Spring Chiseled, Disked	Spring Chiseled, Disked	Spring Chiseled, Disked
2015 tilling[1]	Spring Chiseled, No Disk	Spring Chiseled, No Disk	Spring Chiseled, No Disk	Spring Chiseled, No Disk
2014 tilling[1]	N/A	N/A	N/A	N/A

[1]Choose one of the following:

- Fall chiseled, disked
- Fall chiseled, no disked
- Fall cultivated
- Fall MB Plow
- Fall vertical tillage
- No Till
- Spring chiseled, disked
- Spring chiseled, no disked
- Spring cultivated
- Spring MB Plow
- Spring vertical tillage

CDL 2014 - BelGioioso Chase WQT



Land Cover Categories

(by decreasing acreage)

AGRICULTURE

- Corn
- Grass/Pasture
- Alfalfa
- Other Hay/Non Alfalfa
- Dry Beans
- Soybeans
- Winter Wheat
- Fallow/Idle Cropland
- Oats
- Sod/Grass Seed

NON-AGRICULTURE*

- Deciduous Forest
- Developed/Open Space
- Developed/Low Intensity
- Woody Wetlands
- Developed/Medium Intensity
- Barren

* Only top 6 non-agriculturecategories are listed.

CDL 2015 - BelGioioso Chase WQT

Land Cover Categories

(by decreasing acreage)

AGRICULTURE

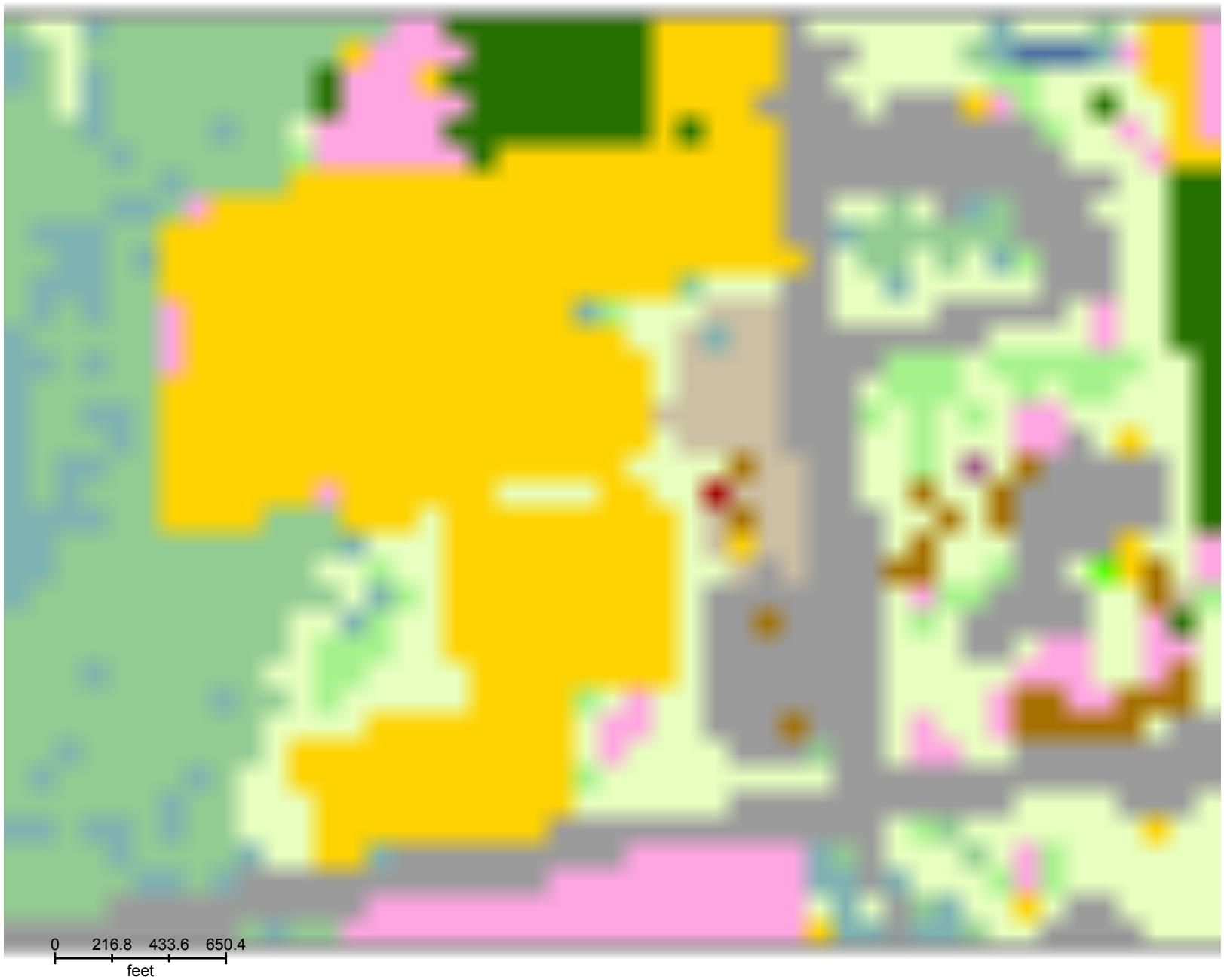
- Corn
- Grass/Pasture
- Alfalfa
- Soybeans
- Other Hay/Non Alfalfa
- Barley
- Oats
- Dry Beans
- Fallow/Idle Cropland

NON-AGRICULTURE*

- Deciduous Forest
- Developed/Open Space
- Developed/Low Intensity
- Woody Wetlands
- Barren
- Developed/Medium Intensity

* Only top 6 non-agriculturecategories are listed.

CDL 2016 - BelGioioso Chase WQT



Land Cover Categories

(by decreasing acreage)

AGRICULTURE

- Corn
- Grass/Pasture
- Alfalfa
- Soybeans
- Other Hay/Non Alfalfa
- Winter Wheat
- Peas
- Dry Beans
- Oats

NON-AGRICULTURE*

- Deciduous Forest
- Developed/Open Space
- Developed/Low Intensity
- Woody Wetlands
- Barren
- Developed/Medium Intensity

* Only top 6 non-agriculturecategories are listed.

CDL 2017 - BelGioioso Chase WQT

Land Cover Categories

(by decreasing acreage)

AGRICULTURE

- Grass/Pasture
- Corn
- Fallow/Idle Cropland
- Alfalfa
- Soybeans
- Other Hay/Non Alfalfa
- Winter Wheat
- Dry Beans

NON-AGRICULTURE*

- Deciduous Forest
- Developed/Open Space
- Developed/Low Intensity
- Woody Wetlands
- Barren
- Developed/Medium Intensity

* Only top 6 non-agriculturecategories are listed.

ATTACHMENT D

Soil Sampling Results

Attachment D

Soil Sample Results Summary

Lab ID	Lab Sample ID	Sample Date	Farm Name	Field Name	Size	Plow Depth	Soil Sample ID	PH	OM	P	K
Soil & Forage Analysis Lab	3791	6/30/2017	Chase	A1	8.4	7	1	7.6	1.8	408	226
Soil & Forage Analysis Lab	3791	6/30/2017	Chase	A1	8.4	7	2	7.5	2.2	544	236
Soil & Forage Analysis Lab	3791	6/30/2017	Chase	B	20	7	3	7.5	1.7	356	210
Soil & Forage Analysis Lab	3791	6/30/2017	Chase	B	20	7	4	7.9	1.3	194	167
Soil & Forage Analysis Lab	3791	6/30/2017	Chase	B	20	7	5	7.2	1.9	316	158
Soil & Forage Analysis Lab	3791	6/30/2017	Chase	C2	15.9	7	6	7.5	2.1	57	102
Soil & Forage Analysis Lab	3791	6/30/2017	Chase	C2	15.9	7	7	7.6	1.7	52	118
Soil & Forage Analysis Lab	3791	6/30/2017	Chase	C2	15.9	7	8	7.3	1.9	70	113

Lab ID	Lab Sample ID	Sample Date	Farm Name	Field Name	Size	Plow Depth	Soil Sample ID	PH	OM	P	K
Soil & Forage Analysis Lab	6654	11/16/2017	Chase	A1	8.4	7	1	8	1.1	291	209
Soil & Forage Analysis Lab	6654	11/16/2017	Chase	A1	8.4	7	2	7.9	1.4	430	321
Soil & Forage Analysis Lab	6654	11/16/2017	Chase	B	20	7	3	7.3	1.5	97	147
Soil & Forage Analysis Lab	6654	11/16/2017	Chase	B	20	7	4	7.2	1.3	195	177
Soil & Forage Analysis Lab	6654	11/16/2017	Chase	B	20	7	5	7.5	1.5	408	203
Soil & Forage Analysis Lab	6654	11/16/2017	Chase	C2	15.9	7	6	7	1.6	46	87
Soil & Forage Analysis Lab	6654	11/16/2017	Chase	C2	15.9	7	7	7.1	1.6	63	91
Soil & Forage Analysis Lab	6654	11/16/2017	Chase	C2	15.9	7	8	6.9	1.7	63	86

Lab ID	Lab Sample ID	Sample Date	Farm Name	Field Name	Size	Plow Depth	Soil Sample ID	PH	OM	P	K
Soil & Forage Analysis Lab	NA	Average	Chase	A1	8.4	7	1	7.8	1.45	349.5	217.5
Soil & Forage Analysis Lab	NA	Average	Chase	A1	8.4	7	2	7.7	1.8	487	278.5
Soil & Forage Analysis Lab	NA	Average	Chase	B	20	7	3	7.4	1.6	226.5	178.5
Soil & Forage Analysis Lab	NA	Average	Chase	B	20	7	4	7.55	1.3	194.5	172
Soil & Forage Analysis Lab	NA	Average	Chase	B	20	7	5	7.35	1.7	362	180.5
Soil & Forage Analysis Lab	NA	Average	Chase	C2	15.9	7	6	7.25	1.85	51.5	94.5
Soil & Forage Analysis Lab	NA	Average	Chase	C2	15.9	7	7	7.35	1.65	57.5	104.5
Soil & Forage Analysis Lab	NA	Average	Chase	C2	15.9	7	8	7.1	1.8	66.5	99.5

PRELIMINARY

The Probst Group
17035 W. WISCONSIN AVE.
SUITE 120
BROOKFIELD, WIS. 53005
TEL: (262) 264-5665
FAX: (262) 436-1359

This document contains information which is the property of The Probst Group, and may not, in whole or in part, be duplicated, disclosed or used for design or manufacturing purposes without the prior written permission of The Probst Group.

CONFIDENTIAL
ALL RIGHTS RESERVED

BELGIOIOSO CHEESE, INC.
CHASE, WISCONSIN
INDUSTRIAL WASTEWATER TREATMENT FACILITY
SOIL SAMPLING MAP

REVISIONS

NO.	DATE

DRAWN BY:	MJM
CHK'D BY:	
PROJ. ENG:	HS
ISSUE DATE:	5-12-15

PROJECT NUMBER:
5016

SHEET

C-2

ATTACHMENT E

SnapPlus Modeling Reports (Current)

SnapPlus Application Summary Report

Starting Year	**2014**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date:	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2014	2015	2016	2017	2018	2019	2020
Land Application	Production (Gallons)	0	0	0	0	0	0	0
	Used (Gallons)	2,123,000	2,200,000	1,215,500	275,000	1,707,750	1,707,750	1,707,750
	Analysis Date	-	-	-	-	-	-	-
	Analysis (N/Ninc/Ninj-P2O5-K2O)	2/0/0-1-0	2/0/0-1-0	2/0/0-1-0	6/0/0-1-0	2/0/0-1-0	2/0/0-1-0	2/0/0-1-0
	Dry Matter (%)							
	Total Value	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Application Results Reported For Farm All

Annual Pounds Of Available N, P2O5 And K2O Applied From Manure and Fertilizer.

		2014	2015	2016	2017	2018	2019	2020
Produced from Manure (lb)	Ninj	0	0	0	0	0	0	0
	P2O5	0	0	0	0	0	0	0
	K2O	0	0	0	0	0	0	0
Total Available Manure Nutrients Applied (lb)	N	3,400	3,950	2,550	1,750	2,725	2,725	2,725
	P2O5	2,275	2,350	1,300	300	1,825	1,825	1,825
	K2O	0	0	0	0	0	0	0
Total Fertilizer Nutrients Applied (lb)	N	0	0	1,910	0	0	1,910	0
	P2O5	0	0	879	0	0	879	0
	K2O	0	0	1,910	0	0	1,910	0
Total Crop Removal (lb)	P2O5	0	1,528	2,101	0	1,528	2,101	0
	K2O	0	2,674	1,528	0	2,674	1,528	0
Nutrient Balance (Applied - Crop removal, lb)	P2O5	2,275	822	78	300	297	603	1,825
	K2O	0	-2,674	382	0	-2,674	382	0

Source		2021
Land Application	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	0 1,707,750 - 2/0/0-1-0 0.00

Annual Pounds Of Available N, P2O5 And K2O Applied From Manure and Fertilizer.		
		2021
Produced from Manure (lb)	Ninj P2O5 K2O	0 0 0
Total Available Manure Nutrients Applied (lb)	N P2O5 K2O	2,725 1,825 0
Total Fertilizer Nutrients Applied (lb)	N P2O5 K2O	0 0 0
Total Crop Removal (lb)	P2O5 K2O	1,528 2,674
Nutrient Balance (Applied - Crop removal, lb)	P2O5 K2O	297 -2,674

SnapPlus Application Summary Report

Starting Year	**2022**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date:	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2022	2023
Land Application	Production (Gallons)	0	0
	Used (Gallons)	1,707,750	1,707,750
	Analysis Date	-	-
	Analysis (N/Ninc/Ninj-P2O5-K2O)	2/0/0-1-0	2/0/0-1-0
	Dry Matter (%)		
	Total Value	0.00	0.00

Application Results Reported For Farm All

Annual Pounds Of Available N, P2O5 And K2O Applied From Manure and Fertilizer.			
		2022	2023
Produced from Manure (lb)	Ninj	0	0
	P2O5	0	0
	K2O	0	0
Total Available Manure Nutrients Applied (lb)	N	2,725	2,725
	P2O5	1,825	1,825
	K2O	0	0
Total Fertilizer Nutrients Applied (lb)	N	1,910	0
	P2O5	879	0
	K2O	1,910	0
Total Crop Removal (lb)	P2O5	2,101	0
	K2O	1,528	0
Nutrient Balance (Applied - Crop removal, lb)	P2O5	603	1,825
	K2O	382	0

SnapPlus Field Data and 590 Assessment Plan

Reported For	BelGioioso Chase
Printed	2018-10-26
Plan Completion/Update Date	2001-01-01
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Field Data: 38 Total Acres Reported.

Field Name	SubFarm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F. Slp %	F.Slp Len ft	Below Field Slope To Water %	Dist.To Water ft	N/Fld Res	Contour/ Filters	Irrig	Tiled	Rotation	Tillage	Report Period	Field "T" t/ac	Rot Avg Soil Loss t/ac	SCI	Rot Avg PI	Soil Test P ppm	Rot P2O5 Bal lb/ac	P2O5 Bal Target lb/ac
A1				6.5	Oconto	ONAWAY 7208	4	200	0 - 2	1001 - 5000		No / No	No	No	IL-Sg15-Cg	None-SCND-SCD	2014-2016	**3**	**2.4**	**0.2**	**10**	418	165	-24
B				18.5	Oconto	ONAWAY 7201	9	150	0 - 2	301 - 1000	W	No / No	No	No	IL-Sg15-Cg	None-SCND-SCD	2014-2016	**3**	**5.8**	**-0.1**	**14**	261	165	-24
C2				13.2	Oconto	ONAWAY 7208	4	200	0 - 2	301 - 1000		No / No	No	No	IL-Sg15-Cg	None-SCND-SCD	2014-2016	**3**	**2.4**	**0.2**	**2**	59	-72	0

Crop Abbreviations

Abbreviation	Crop
Cg	Corn grain
IL	Idle Land
Sg15	Soybeans 15-20 inch row

Tillage Abbreviations

Abbreviation	Tillage
None	None
SCD	Spring Chisel, disked
SCND	Spring Chisel, no disk

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 200 feet upslope of field.
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table
+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

SnapPlus Manure Tracking Report

Starting Year	**2014**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date:	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Acres/ CropYear	2014	2015	2016	2017	2018	2019	2020	2021
Acres in plan	38.2	38.2	38.2	38.2	38.2	38.2	38.2	38.2
Acres receiving manure	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2014	2015	2016	2017	2018	2019	2020	2021
Land Application	Production (Gallons)	0	0	0	0	0	0	0	0
	Used (Gallons)	2,123,000	2,200,000	1,215,500	275,000	1,707,750	1,707,750	1,707,750	1,707,750
	Analysis Date	-	-	-	-	-	-	-	-
	Analysis (N/Ninc/Ninj-P2O5-K2O)	2/0/0-1-0	2/0/0-1-0	2/0/0-1-0	6/0/0-1-0	2/0/0-1-0	2/0/0-1-0	2/0/0-1-0	2/0/0-1-0
	Dry Matter (%)								
	Total Value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Estimated Livestock Manure Production For 2014

No Livestock Found

Manure Storage For 2014

No Storages Found

Spreaders For 2014

No Spreaders Found

SnapPlus Manure Tracking Report

Starting Year	**2022**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date:	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Acres/ CropYear	2022	2023
Acres in plan	38.2	38.2
Acres receiving manure	25.0	25.0

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2022	2023
Land Application	Production (Gallons)	0	0
	Used (Gallons)	1,707,750	1,707,750
	Analysis Date	-	-
	Analysis (N/Ninc/Ninj-P2O5-K2O)	2/0/0-1-0	2/0/0-1-0
	Dry Matter (%)		
	Total Value	0.00	0.00

Estimated Livestock Manure Production For 2022

No Livestock Found

Manure Storage For 2022

No Storages Found

Spreaders For 2022

No Spreaders Found

SnapPlus Narrative and Crops Report

Starting Year	**2014**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date:	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Farm has 3 fields totalling 38.2 acres
Farm Narrative: None
Concentrated Flow Notes: None

Field Name	Acres	2014	2015	2016	2017	2018	2019	2020	2021
A1	6.5	Idle Land None 0-0 none/acre	Soybeans 15-20 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain Spring Chisel, disked 131-150 bu/acre	Idle Land None 0-0 none/acre	Soybeans 15-20 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain Spring Chisel, disked 131-150 bu/acre	Idle Land None 0-0 none/acre	Soybeans 15-20 inch row Spring Chisel, no disk 46-55 bu/acre
B	18.5	Idle Land None 0-0 none/acre	Soybeans 15-20 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain Spring Chisel, disked 131-150 bu/acre	Idle Land None 0-0 none/acre	Soybeans 15-20 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain Spring Chisel, disked 131-150 bu/acre	Idle Land None 0-0 none/acre	Soybeans 15-20 inch row Spring Chisel, no disk 46-55 bu/acre
C2	13.2	Idle Land None 0-0 none/acre	Soybeans 15-20 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain Spring Chisel, disked 131-150 bu/acre	Idle Land None 0-0 none/acre	Soybeans 15-20 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain Spring Chisel, disked 131-150 bu/acre	Idle Land None 0-0 none/acre	Soybeans 15-20 inch row Spring Chisel, no disk 46-55 bu/acre

Summary by Crop:
NOTE: Yields calculated using the midpoint of the SnapPlus yield goal range for each crop.

Crops Grouped By Category		2014	2015	2016	2017	2018	2019	2020	2021
Corn grain	Acres bu			38 5,339			38 5,339		

Crops Grouped By Category		2014	2015	2016	2017	2018	2019	2020	2021
Idle Land	Acres none	38 0			38 0			38 0	
Soybeans 15-20 inch row	Acres bu		38 1,919			38 1,919			38 1,919

SnapPlus Narrative and Crops Report

Starting Year	**2022**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date:	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Farm has 3 fields totalling 38.2 acres
Farm Narrative: None
Concentrated Flow Notes: None

Field Name	Acres	2022	2023
A1	6.5	Corn grain Spring Chisel, disked 131-150 bu/acre	Idle Land None 0-0 none/acre
B	18.5	Corn grain Spring Chisel, disked 131-150 bu/acre	Idle Land None 0-0 none/acre
C2	13.2	Corn grain Spring Chisel, disked 131-150 bu/acre	Idle Land None 0-0 none/acre

Summary by Crop:
NOTE: Yields calculated using the midpoint of the SnapPlus yield goal range for each crop.

Crops Grouped By Category		2022	2023
Corn grain	Acres bu	38 5,339	
Idle Land	Acres none		38 0

SnapPlus Nutrient Management Report

Crop Year	**2015**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Field data: 38 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2014 Crop	2015 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A1	6.5	ONAWAY 7208	418	248	Idle Land	Soybeans 15-20 inch row	46-55	Spring Chisel, no disk	0	0	0	158	94	0	158	94	0
B	18.5	ONAWAY 7208 W	261	177	Idle Land	Soybeans 15-20 inch row	46-55	Spring Chisel, no disk	0	0	20	158	94	0	158	94	-20
C2	13.2	ONAWAY 7208	59	100	Idle Land	Soybeans 15-20 inch row	46-55	Spring Chisel, no disk	0	0	100	0	0	0	0	0	-100

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 200 feet upslope of field.
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table
+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

SnapPlus Nutrient Management Report

Crop Year	**2016**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Field data: 38 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2015 Crop	2016 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A1	6.5	ONAWAY 7208	418	248	Soybeans 15-20 inch row	Corn grain	131-150	Spring Chisel, disked	140 0.05 /MRTN	0	0	152	75	50	12	75	50
B	18.5	ONAWAY 7208 W	261	177	Soybeans 15-20 inch row	Corn grain	131-150	Spring Chisel, disked	140 0.05 /MRTN	0	10	152	75	50	12	75	40
C2	13.2	ONAWAY 7208	59	100	Soybeans 15-20 inch row	Corn grain	131-150	Spring Chisel, disked	140 0.05 /MRTN	0	70	50	23	50	-90	23	-20

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 200 feet upslope of field.
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table

+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

SnapPlus Nutrient Management Report

Crop Year	**2017**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Field data: 38 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2016 Crop	2017 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A1	6.5	ONAWAY 7208	418	248	Corn grain	Idle Land	0-0	None	0	0	0	70	12	0	70	12	0
B	18.5	ONAWAY 7208 W	261	177	Corn grain	Idle Land	0-0	None	0	0	0	70	12	0	70	12	0
C2	13.2	ONAWAY 7208	59	100	Corn grain	Idle Land	0-0	None	0	0	0	0	0	0	0	0	0

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 200 feet upslope of field.
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table
+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

SnapPlus Nutrient Management Report

Crop Year	**2018**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Field data: 38 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2017 Crop	2018 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A1	6.5	ONAWAY 7208	418	248	Idle Land	Soybeans 15-20 inch row	46-55	Spring Chisel, no disk	0	0	0	109	73	0	109	73	0
B	18.5	ONAWAY 7208 W	261	177	Idle Land	Soybeans 15-20 inch row	46-55	Spring Chisel, no disk	0	0	0	109	73	0	109	73	0
C2	13.2	ONAWAY 7208	59	100	Idle Land	Soybeans 15-20 inch row	46-55	Spring Chisel, no disk	0	0	100	0	0	0	0	0	-100

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 200 feet upslope of field.
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table
+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

SnapPlus P Trade Report

Reported For	BelGioioso Chase
Printed	2018-10-26
Plan Completion/Update Date	2001-01-01
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

The P Trade Report estimates the annual pounds of phosphorus (P) in surface runoff from cropland entering surface waters. These P loss calculations are based on a field's soil test P concentration, crops, tillage, nutrient management practices and estimates of average runoff and sheet and rill erosion for the predominant soil type. Losses from concentrated flow channel or gully erosion with a field are not included in these calculations. Field runoff losses are calculated for each year as **PTP** (lb P/field/yr). Fields are only included if there are at least 2 years of crops before the selected start year. Before using this report as part of a Water Quality Trade activity, phosphorus losses (PTP) must be converted into 'P credits' according to DNR guidance.

For more information go to **http://dnr.wi.gov/** and type keyword: **Water Quality Trading**

Questions? Please contact DNRphosphorus@wisconsin.gov

This report was developed for Wisconsin DNR Water Quality Trading and Adaptive Management purposes and cannot be used to demonstrate compliance with NR 151 or NRCS 590 NM plan requirements.

P Trade Report				PTP										
Field Name	Soil Series	Soil Symbol	Acres	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
A1	ONAWAY	7208	7	80	42	64	82	54	65	84	55	67	85	56
B	ONAWAY	7208	19	176	86	147	185	123	151	190	126	154	194	130
C2	ONAWAY	7208	13	43	17	25	40	16	24	39	15	23	38	14
Total			**38**	**299**	**145**	**236**	**307**	**193**	**240**	**312**	**197**	**244**	**318**	**200**

PTP	
2027	2028
68	87
158	199
23	37
248	**323**

SnapPlus Soil Test Report

Reported For	BelGioioso Chase
Printed	2018-10-26
Plan Completion/Update Date	2001-01-01
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Current_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

			Predominant					Samples				in ppm			
Field Name	Subfarm	Acres	Soil Map Symbol	Soil Name	Soil Test Date	Soil Test Lab	Lab Number	Rec. #	Actual #	pH	OM%	P	K	S	CEC
A1		6.5	7208	ONAWAY	2018-02-25	Soil & Forage Analysis Lab	6654	**1**	**2**	7.8	1.6	418	248	0	0
B		18.5	7208	ONAWAY	2018-02-25	Soil & Forage Analysis Lab	6654	**3**	**3**	7.4	1.5	261	177	0	0
C2		13.2	7208	ONAWAY	2018-02-25	Soil & Forage Analysis Lab	6654	**3**	**3**	7.2	1.8	59	100	0	0

Crop Year Soil Test Needed

Field Name	Soil Test Date	2018	2019	2020	2021	2022	2023	2024
A1	2018-02-25					X		
B	2018-02-25					X		
C2	2018-02-25					X		

ATTACHMENT F

SnapPlus Modeling Reports (Prairie)

SnapPlus Application Summary Report

Starting Year	**2016**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date:	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2016	2017	2018	2019	2020	2021
Land Application	Production (Gallons)	0	0	0	0	0	0
	Used (Gallons)	1,215,500	275,000	0	0	0	0
	Analysis Date	-	-	-	-	-	-
	Analysis (N/Ninc/Ninj-P2O5-K2O)	2/0/0-1-0	6/0/0-1-0	2/0/0-1-0	2/0/0-1-0	2/0/0-1-0	2/0/0-1-0
	Dry Matter (%)						
	Total Value	0.00	0.00	0.00	0.00	0.00	0.00

Application Results Reported For Farm All

Annual Pounds Of Available N, P2O5 And K2O Applied From Manure and Fertilizer.

		2016	2017	2018	2019	2020	2021
Produced from Manure (lb)	Ninj	0	0	0	0	0	0
	P2O5	0	0	0	0	0	0
	K2O	0	0	0	0	0	0
Total Available Manure Nutrients Applied (lb)	N	2,550	1,750	0	0	0	0
	P2O5	1,300	300	0	0	0	0
	K2O	0	0	0	0	0	0
Total Fertilizer Nutrients Applied (lb)	N	1,910	0	0	0	0	0
	P2O5	879	0	0	0	0	0
	K2O	1,910	0	0	0	0	0
Total Crop Removal (lb)	P2O5	2,101	573	0	0	0	0
	K2O	1,528	382	0	0	0	0
Nutrient Balance (Applied - Crop removal, lb)	P2O5	78	-273	0	0	0	0
	K2O	382	-382	0	0	0	0

SnapPlus Application Summary Report

Starting Year	**2022**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date:	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2022	2023
Land Application	Production (Gallons)	0	0
	Used (Gallons)	0	0
	Analysis Date	-	-
	Analysis (N/Ninc/Ninj-P2O5-K2O)	2/0/0-1-0	2/0/0-1-0
	Dry Matter (%)		
	Total Value	0.00	0.00

Application Results Reported For Farm All

Annual Pounds Of Available N, P2O5 And K2O Applied From Manure and Fertilizer.			
		2022	2023
Produced from Manure (lb)	Ninj	0	0
	P2O5	0	0
	K2O	0	0
Total Available Manure Nutrients Applied (lb)	N	0	0
	P2O5	0	0
	K2O	0	0
Total Fertilizer Nutrients Applied (lb)	N	0	0
	P2O5	0	0
	K2O	0	0
Total Crop Removal (lb)	P2O5	0	0
	K2O	0	0
Nutrient Balance (Applied - Crop removal, lb)	P2O5	0	0
	K2O	0	0

SnapPlus Field Data and 590 Assessment Plan

Reported For	BelGioioso Chase
Printed	2018-10-26
Plan Completion/Update Date	2001-01-01
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Field Data: 38 Total Acres Reported.

Field Name	SubFarm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F. Slp %	F.Slp Len ft	Below Field Slope To Water %	Dist.To Water ft	N/Fld Res	Contour/ Filters	Irrig	Tiled	Rotation	Tillage	Report Period	Field "T" t/ac	Rot Avg Soil Loss t/ac	SCI	Rot Avg PI	Soil Test P ppm	Rot P2O5 Bal lb/ac	P2O5 Bal Target lb/ac
A1				6.5	Oconto	ONAWAY 7208	4	200	0 - 2	1001 - 5000		No / No	No	No	Gnh-Gnh-Gnh	None-None-None	2018-2020	**3**	**0**	**1.6**	**2**	418	0	0
B				18.5	Oconto	ONAWAY 7201	9	150	0 - 2	301 - 1000	W	No / No	No	No	Gnh-Gnh-Gnh	None-None-None	2018-2020	**3**	**0**	**1.6**	**1**	261	0	0
C2				13.2	Oconto	ONAWAY 7208	4	200	0 - 2	301 - 1000		No / No	No	No	Gnh-Gnh-Gnh	None-None-None	2018-2020	**3**	**0**	**1.6**	**0**	59	0	0

Crop Abbreviations

Abbreviation	Crop
Gnh	Grasslands, permanent, not harvested

Tillage Abbreviations

Abbreviation	Tillage
None	None

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 200 feet upslope of field.
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table
+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

SnapPlus Manure Tracking Report

Starting Year	**2014**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date:	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Acres/ CropYear	2014	2015	2016	2017	2018	2019	2020	2021
Acres in plan	38.2	38.2	38.2	38.2	38.2	38.2	38.2	38.2
Acres receiving manure	25.0	25.0	25.0	25.0	0.0	0.0	0.0	0.0

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2014	2015	2016	2017	2018	2019	2020	2021
Land Application	Production (Gallons)	0	0	0	0	0	0	0	0
	Used (Gallons)	2,123,000	2,200,000	1,215,500	275,000	0	0	0	0
	Analysis Date	-	-	-	-	-	-	-	-
	Analysis (N/Ninc/Ninj-P2O5-K2O)	2/0/0-1-0	2/0/0-1-0	2/0/0-1-0	6/0/0-1-0	2/0/0-1-0	2/0/0-1-0	2/0/0-1-0	2/0/0-1-0
	Dry Matter (%)								
	Total Value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Estimated Livestock Manure Production For 2018

No Livestock Found

Manure Storage For 2018

No Storages Found

Spreaders For 2018

No Spreaders Found

SnapPlus Manure Tracking Report

Starting Year	**2022**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date:	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Acres/ CropYear	2022	2023
Acres in plan	38.2	38.2
Acres receiving manure	0.0	0.0

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2022	2023
Land Application	Production (Gallons)	0	0
	Used (Gallons)	0	0
	Analysis Date	-	-
	Analysis (N/Ninc/Ninj-P2O5-K2O)	2/0/0-1-0	2/0/0-1-0
	Dry Matter (%)		
	Total Value	0.00	0.00

Estimated Livestock Manure Production For 2022

No Livestock Found

Manure Storage For 2022

No Storages Found

Spreaders For 2022

No Spreaders Found

SnapPlus Narrative and Crops Report

Starting Year	**2014**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date:	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Farm has 3 fields totalling 38.2 acres
Farm Narrative: None
Concentrated Flow Notes: None

Field Name	Acres	2014	2015	2016	2017	2018	2019	2020	2021
A1	6.5	Idle Land None 0-0 none/acre	Soybeans 15-20 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain Spring Chisel, disked 131-150 bu/acre	Oats Fall Chisel, disked 30-60 bu/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre
B	18.5	Idle Land None 0-0 none/acre	Soybeans 15-20 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain Spring Chisel, disked 131-150 bu/acre	Oats Fall Chisel, disked 30-60 bu/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre
C2	13.2	Idle Land None 0-0 none/acre	Soybeans 15-20 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain Spring Chisel, disked 131-150 bu/acre	Oats Fall Chisel, disked 30-60 bu/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre

Summary by Crop:
NOTE: Yields calculated using the midpoint of the SnapPlus yield goal range for each crop.

Crops Grouped By Category		2014	2015	2016	2017	2018	2019	2020	2021
Corn grain	Acres bu			38 5,339					

Crops Grouped By Category		2014	2015	2016	2017	2018	2019	2020	2021
Grasslands, permanent, not harvested	Acres none					38 0	38 0	38 0	38 0
Idle Land	Acres none	38 0							
Oats	Acres bu				38 1,710				
Soybeans 15-20 inch row	Acres bu		38 1,919						

SnapPlus Narrative and Crops Report

Starting Year	**2022**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date:	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Farm has 3 fields totalling 38.2 acres
Farm Narrative: None
Concentrated Flow Notes: None

Field Name	Acres	2022	2023
A1	6.5	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre
B	18.5	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre
C2	13.2	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre

Summary by Crop:
NOTE: Yields calculated using the midpoint of the SnapPlus yield goal range for each crop.

Crops Grouped By Category		2022	2023
Grasslands, permanent, not harvested	Acres none	38 0	38 0

SnapPlus Nutrient Management Report

Crop Year	**2015**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Field data: 38 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2014 Crop	2015 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A1	6.5	ONAWAY 7208	418	248	Idle Land	Soybeans 15-20 inch row	46-55	Spring Chisel, no disk	0	0	0	158	94	0	158	94	0
B	18.5	ONAWAY 7208 W	261	177	Idle Land	Soybeans 15-20 inch row	46-55	Spring Chisel, no disk	0	0	20	158	94	0	158	94	-20
C2	13.2	ONAWAY 7208	59	100	Idle Land	Soybeans 15-20 inch row	46-55	Spring Chisel, no disk	0	0	100	0	0	0	0	0	-100

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 200 feet upslope of field.
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table
+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

SnapPlus Nutrient Management Report

Crop Year	**2016**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Field data: 38 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2015 Crop	2016 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A1	6.5	ONAWAY 7208	418	248	Soybeans 15-20 inch row	Corn grain	131-150	Spring Chisel, disked	140 0.05 /MRTN	0	0	152	75	50	12	75	50
B	18.5	ONAWAY 7208 W	261	177	Soybeans 15-20 inch row	Corn grain	131-150	Spring Chisel, disked	140 0.05 /MRTN	0	10	152	75	50	12	75	40
C2	13.2	ONAWAY 7208	59	100	Soybeans 15-20 inch row	Corn grain	131-150	Spring Chisel, disked	140 0.05 /MRTN	0	70	50	23	50	-90	23	-20

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 200 feet upslope of field.
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table

+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

SnapPlus Nutrient Management Report

Crop Year	**2017**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Field data: 38 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2016 Crop	2017 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A1	6.5	ONAWAY 7208	418	248	Corn grain	Oats	30-60	Fall Chisel, disked	60	0	0	70	12	0	10	12	0
B	18.5	ONAWAY 7208 W	261	177	Corn grain	Oats	30-60	Fall Chisel, disked	60	0	0	70	12	0	10	12	0
C2	13.2	ONAWAY 7208	59	100	Corn grain	Oats	30-60	Fall Chisel, disked	60	0	40	0	0	0	-60	0	-40

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 200 feet upslope of field.
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table
+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

SnapPlus Nutrient Management Report

Crop Year	**2018**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Field data: 38 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2017 Crop	2018 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A1	6.5	ONAWAY 7208	418	248	Oats	Grasslands, permanent, not harvested	0-0	None	0	0	0	0	0	0	0	0	0
B	18.5	ONAWAY 7208 W	261	177	Oats	Grasslands, permanent, not harvested	0-0	None	0	0	0	0	0	0	0	0	0
C2	13.2	ONAWAY 7208	59	100	Oats	Grasslands, permanent, not harvested	0-0	None	0	0	0	0	0	0	0	0	0

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 200 feet upslope of field.
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table

+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

SnapPlus Nutrient Management Report

Crop Year	**2019**
Reported For	**BelGioioso Chase**
Printed	**2018-10-26**
Plan Completion/Update Date	**2001-01-01**
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

Field data: 38 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2018 Crop	2019 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A1	6.5	ONAWAY 7208	418	248	Grasslands, permanent, not harvested	Grasslands, permanent, not harvested	0-0	None	0	0	0	0	0	0	0	0	0
B	18.5	ONAWAY 7208 W	261	177	Grasslands, permanent, not harvested	Grasslands, permanent, not harvested	0-0	None	0	0	0	0	0	0	0	0	0
C2	13.2	ONAWAY 7208	59	100	Grasslands, permanent, not harvested	Grasslands, permanent, not harvested	0-0	None	0	0	0	0	0	0	0	0	0

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 200 feet upslope of field.
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table

+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

SnapPlus P Trade Report

Reported For	BelGioioso Chase
Printed	2018-10-26
Plan Completion/Update Date	2001-01-01
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

The P Trade Report estimates the annual pounds of phosphorus (P) in surface runoff from cropland entering surface waters. These P loss calculations are based on a field's soil test P concentration, crops, tillage, nutrient management practices and estimates of average runoff and sheet and rill erosion for the predominant soil type. Losses from concentrated flow channel or gully erosion with a field are not included in these calculations. Field runoff losses are calculated for each year as **PTP** (lb P/field/yr). Fields are only included if there are at least 2 years of crops before the selected start year. Before using this report as part of a Water Quality Trade activity, phosphorus losses (PTP) must be converted into 'P credits' according to DNR guidance.

For more information go to **http://dnr.wi.gov/** and type keyword: **Water Quality Trading**

Questions? Please contact DNRphosphorus@wisconsin.gov

This report was developed for Wisconsin DNR Water Quality Trading and Adaptive Management purposes and cannot be used to demonstrate compliance with NR 151 or NRCS 590 NM plan requirements.

P Trade Report				PTP										
Field Name	Soil Series	Soil Symbol	Acres	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
A1	ONAWAY	7208	7	80	27	21	17	15	15	14	14	14	14	14
B	ONAWAY	7208	19	176	56	41	33	30	29	28	28	28	28	28
C2	ONAWAY	7208	13	43	15	7	5	4	4	4	4	4	4	4
Total			**38**	**299**	**97**	**68**	**54**	**50**	**48**	**47**	**46**	**46**	**46**	**45**

PTP		
2027	2028	2029
14	14	14
28	28	28
4	4	4
45	**45**	**45**

SnapPlus Soil Test Report

Reported For	BelGioioso Chase
Printed	2018-10-26
Plan Completion/Update Date	2001-01-01
SnapPlus Version 16.3 built on 2016-10-31	
W:\Clients\BelGioioso\Chase\5016_Chase_New WWTP\Permitting & Regulations\WQT\BelGioioso Chase Future_Rev1.snapDb	

Prepared for:
BelGioioso Chase
attn:BelGioioso Chase

			Predominant					Samples				in ppm			
Field Name	Subfarm	Acres	Soil Map Symbol	Soil Name	Soil Test Date	Soil Test Lab	Lab Number	Rec. #	Actual #	pH	OM%	P	K	S	CEC
A1		6.5	7208	ONAWAY	2018-02-25	Soil & Forage Analysis Lab	6654	**1**	**2**	7.8	1.6	418	248	0	0
B		18.5	7208	ONAWAY	2018-02-25	Soil & Forage Analysis Lab	6654	**3**	**3**	7.4	1.5	261	177	0	0
C2		13.2	7208	ONAWAY	2018-02-25	Soil & Forage Analysis Lab	6654	**3**	**3**	7.2	1.8	59	100	0	0

Crop Year Soil Test Needed

Field Name	Soil Test Date	2018	2019	2020	2021	2022	2023	2024
A1	2018-02-25					X		
B	2018-02-25					X		
C2	2018-02-25					X		

ATTACHMENT G

Blank "Practice Registration Form" 3400-207

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Water Quality Trading Management Practice Registration

Form 3400-207 (R 1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
BelGioioso Cheese Inc. - Chase	WI- 0065579-01	

Facility Address	City	State	ZIP Code
7700 N Brown County Line Road	Pulaski	WI	54162

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Lynn Morrison - Probst Group	17035 W Wisconsin Ave Suite 120	Brookfield	WI	53005

Project Name
BelGioioso Chase New WWTP

Broker/Exchange Information (if applicable)

Was a broker/exchange be used to facilitate trade? ○ Yes ◉ No

Broker/Exchange Organization Name	Contact Name	
Address	Phone Number	Email

Trade Registration Information (Use a separate form for each trade agreement)

Type	Trade Agreement Number	Practices Used to Generate Credits	Anticipated Load Reduction	Trade Ratio	Method of Quantification
○ Urban NPS ◉ Agricultural NPS ○ Other	WQT-20180809	Conversion of farmland to natural prairie per NRCS 327	2018: 54.50 2019: 197.15 2020: 135.17 2021: 183.35 2022: 208.21 2023: 141.62	1.2:1	SnapPlusV2 16.3

County	Closest Receiving Water Name	Land Parcel ID(s)	Parameter(s) being traded
Oconto	Unnamed Trib WBIC 5014649		Total Phosphorus

The preparer certifies all of the following:

- I have completed this document to the best of my knowledge and have not excluded pertinent information.
- I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer	Date Signed

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed

Leave Blank – For Department Use Only

Date Received		Trade Docket Number
Entered in Tracking System ☐ Yes	Date Entered	Name of Department Reviewer

ATTACHMENT H

Prairie Establishment Plan

Belgioioso Cheese Prairie Plantings
Establishment Plan

This Establishment Plan was developed to establish permanent conservation cover consistent with the requirements and recommendations of NRCS Technical Standard 327. The primary purpose of the installation of conservation cover at the sites is to reduce downstream surface water quality degradation by nutrients and sedimentation.

Soil Preparation

Fields were left fallow in early 2017. The site was tilled and planted to oats on September 12, 2017. The oats will grow until freezing temperatures kill them. The dead biomass will provide soil stabilizaiton over the winter. In the spring of 2018, some drainage channels will require moderate regrading. In late May, any weeds growing on site will be sprayed with Round Up and 2,4-D killing.

Seed Products

Seed, with the exception of cover crop, shall be species native to Oconto or Brown County, Wisconsin and from a genetic source within the Midwest. Species selected are known to grow in Octonto or Brown County, WI, as listed by the University of Wisconsin's state herbarium records. Seed provided shall be measured as pure live seed, properly labeled and shipped in accordance with Wisconsin law. The species chosen have been carefully selected to ensure they are adapted to the local soils, ecological conditions and climactic conditions of the region.

Three seeding mixes will be used to ensure that species planted are adapted to the particular area of the site where they will be installed. The seed mixes include a heavier seeding of grasses than is typical because the primary purpose of the conservation cover is to reduce downstream surface water quality degradation by nutrients and sedimentation and to ensure quick site stabilization. Further, each unit includes a fairly dense seeding of Elymus canadensis (Canada wild rye), which establishes quickly. Unlike the other prairie grass species, Elymus canadensis is a cool season grass that typically germinates more readily without stratification and will provide a secondary cover after the oat cover crop (described below) begins to senesce in the mid-summer. The remaining warm season grasses are slower to establish, but will eventually come to dominate the site and provide a permanent cover that, if properly maintained, will last indefinitely. These species have deep root systems and will completely stabilize the soil at maturity.

In order to ensure that the primary purpose of the conservation cover will be met, seed for native grass species will be applied at a minimum rate of 10 lbs/acre. Oats will be seeded at a rate of 35 lbs/acre and used as a cover crop during the first year. Oats will be used as a cover crop because they germinate quickly and will provide ample cover within a few weeks. Other cover crop species have various drawbacks that oats do not have, such as an allelopathic effect (winter rye or winter wheat) and or they tend to persist longer than desired (annual rye).

The property has been broken into three units: Planting Zone 1 (flatter hill tops), Planting Zone 2 (steeper slopes) and Planting Zone 3 (flat and wetter areas the bottom of slopes). In addition, a seed mix specifically designed to reduce erosion will be installed under erosion control blanket, where required. The seed species and quantities are described below:

Planting Zone 1: These areas are on the top of slopes and therefore relatively flat to moderately sloped. The species selected and rates are biased toward more mesic species.

Planting Zone 1				
Grasses and Sedges	28	ac		
Scientific Name	*Common Name*	*Rate/Ac*	*Unit*	*Total Seed Qty*
Andropogon scoparius	Little Bluestem	3.000	lb	84.000
Bouteloua curtipendula	Side-oats Grama	2.000	lb	56.000
Andropogon gerardii	Big bluestem	0.500	lb	14.000
Sorghastrum nutans	Indiangrass	0.500	lb	14.000
Elymus canadensis	Canada Wild Rye	3.000	lb	84.000
Panicum virgatum	Switch Grass	1.000	lb	28.000
	Total grasses and sedges	*10.000*	*lb*	*280.000*

Planting Zone 2**:** This unit is moderately to steeply sloped and includes some eroded channels. Soils are gravelly and droughty. Therefore the plants selected are dry to dry mesic species with a bias toward species that will provide erosion control.

Planting Zone 2				
Grasses and Sedges	10.3	ac		
Scientific Name	*Common Name*	*Rate/Ac*	*Unit*	*Total Seed Qty*
Andropogon scoparius	Little Bluestem	2.500	lb	25.750
Bouteloua curtipendula	Side-oats Grama	2.000	lb	20.600
Koeleria cristata	Junegrass	0.100	lb	1.030
Andropogon gerardii	Big bluestem	1.000	lb	10.300
Sorghastrum nutans	Indiangrass	1.000	lb	10.300
Elymus canadensis	Canada Wild Rye	3.000	lb	30.900
Panicum virgatum	Switch Grass	0.500	lb	5.150
	Total grasses and sedges	*10.100*	*lb*	*104.030*

Planting Zone 3: This unit is at the bottom of the slope and is fairly flat. It includes the confluence of a number of eroded channels. These channels have deposited eroded soil from the higher slopes in this area for many years created a wet spot in an area that would otherwise have been dry historically. The seed mix includes both wet and mesic species. We will also plant 320 Spartina pectinata (prairie cord grass) plugs. This species will provide excellent erosion control but germination from seed can be slow.

Planting Zone 3

Grasses and Sedges 0.9 ac

Scientific Name	*Common Name*	*Rate/Ac*	*Unit*	*Total Seed Qty*
Andropogon scoparius	Little Bluestem	0.500	lb	0.450
Bouteloua curtipendula	Side-oats Grama	1.000	lb	0.900
Bromus ciliatus	Fringed brome	0.200	lb	0.180
Andropogon gerardii	Big bluestem	2.000	lb	1.800
Sorghastrum nutans	Indiangrass	0.900	lb	0.810
Carex scoparia	Broom sedge	0.200	lb	0.180
Carex vulpinoidea	Fox Sedge	0.200	lb	0.180
Elymus canadensis	Canada Wild Rye	3.000	lb	2.700
Panicum virgatum	Switch Grass	2.000	lb	1.800
	Total grasses and sedges	*10.000*		*9.000*

Erosion Control: Areas that are to receive type 1 and Type 2 erosion matting will be seeded with the seed mix that corresponds to the Planting Zone they are located in. Before installing the mat, seed from the species below will also be installed.

Scientific Name	*Common Name*	*Qty*	*Unit*	*Total Seed Qty*
Spartina pectinata	Cord grass	1.000	lb	1.000
Bromus ciliatus	Fringed brome	1.000	lb	1.000
Carex comosa	Bristly sedge	2.000	lb	1.000

The seeding mixes will be installed in the planting zones in accordance with the attached map.

Seed Installation

After soil preparation described above, seed will be planted in June of 2018 using a no-till drill specifically manufactured for the purpose of planting prairie seed.

Erosion Control

See erosion control plan.

Erosion matting will be placed in locations where significant erosion has been noted in the past. The erosion control plan shows the locations of Type 1 and Type 2 erosion mat. Additional locations may also be identified.

Type 1 is defined as: Class 1 Type A Urban (EG1SNN) is the single net straw with biodegradable net

- Single net straw: 100% straw with a single biodegradable jute netting. It is designed to provide erosion protection and assist with vegetation establishment for 8 to 12 months on slopes up to 3:1 and low-flow channels.

Type 2 is defined as: Class 1 Type B Urban (EG2SNN) is the double net straw with biodegradable nets

- Double net straw: 100% straw between two biodegradable jute nettings. It is designed to provide erosion control and assist with vegetation establishment assistance for 8 to 12 months on 2:1 to 3:1 slopes and in moderate-flow channels.

Seed Establishment Standards

Standards for 2018, the Year of Planting

- Germination of cover crop shall occur within 20 days of installation. Cover crop establishment shall be uniform and consistent. Any area of more than 1 square yard that is devoid of cover crop shall be reseeded within three weeks of installation.
- Germination of native grass species shall be apparent by mid-August. Areas of erosion where seed has likely been lost will be reseeded and appropriate erosion control measures applied.
- Establishment of native grasses should be consistent and widespread by the middle of September 2018, although seedlings are likely to be inconspicuous. Areas greater than 100 square yards that do not have native grasses shall be reseeded with native grasses as soon as possible.

Seed Establishment Activities

Mowing: The purpose of mowing is to keep weeds from going to seed and to allow sunlight to penetrate to native grasses seedlings and to limit competition for water by weed species.

During the Year of Planting, seeded areas shall be mowed at a height of 8 to 12 inches when vegetation has reached a height of 18 inches. Depending on the growing conditions, this may require mowing as frequently as every two weeks. In no event will mowing be conducted at a height less than 8 inches.

Herbicide Applications: Herbicide shall be applied to perennial weeds such as Canada thistle or woody plants that invade the areas seeded with prairie seed. The herbicide used shall be the most selective possible given the target species and shall be applied only to the target species to the extent practicable. Herbicide shall not be applied to annual weeds unless they cannot be controlled by mowing and if they have a developed a monoculture that precludes establishment of native grasses.

Site Inspections

The sites will be inspected one month after installation by Carl Korfmacher of Midwest Prairies, LLC to ensure cover crop germination. The site will also be inspected to confirm initial germination of native grasses in mid-September 2018 in order to provide ample time to develop a cover cropping plan for winter, if necessary. After that, the sites will be inspected per the operation and maintenance standards.

ATTACHMENT I
Prairie O&M Plan

Belgioioso Cheese Prairie Plantings
Operation and Maintenance Plan

The goal of this Operation and Maintenance Plan is to ensure native cover remains consistently and exclusively throughout the site in perpetuity. The primary purpose of the installation and maintenance of conservation cover at the site is to reduce downstream surface water quality degradation by nutrients and sedimentation. This Maintenance Plan was developed to ensure this goal is achieved and is consistent with the requirements and recommendations of NRCS Technical Standard 327.

Prairie plants require regular maintenance and management to remain healthy. The concept of adaptive management is critical. Adaptive management implies that while we can and will prepare for certain activities to occur on site, we also must respond to changing conditions that are not always predictable. As a result, this Plan outlines certain activities to ensure the prairie plants remain healthy, but management practices will remain flexible and consistent with the principles outlined below, in order to adapt to any changing circumstances on-site.

As outlined below, the site will be inspected to ensure that management tools are used appropriately. The inspector will walk the entire site and take photos and notes regarding plant diversity, density, overall ecological health, and any erosion issues. Based on those findings, a more detailed prescription for remedial and maintenance activities will be developed specific to the current conditions on the site to ensure that consistent, perennial native cover remains on the site. The prescriptions for such activities will follow the standards and practices below.

Prairie Cover Standards for Seasons after the First Season

Standards for Second Growing Season:

- Native grasses shall be found consistently throughout the site by mid-July 2019. Areas greater than 25 square yards that exclusively have plants that are not native grasses shall be reseeded with native grasses prior to November 30, 2019.

Standards for Third and Fourth Growing Seasons:

- Native grasses shall be found consistently throughout the site by mid-July 2020 and 2021. Areas greater than 5 square yards that exclusively have plants that are not native grasses shall be reseeded with native grasses prior to the end of November 2020 and 2021.

Standards for the Fifth Growing Season and Subsequent Seasons:

- Native grasses shall be found consistently throughout the site as determined during the annual inspection each year. Areas greater than 5 square yards that exclusively have plants that are not native grasses shall be reseeded with native grasses in November of that same year.

Reseeding activities shall continue in following seasons as necessary to ensure the standards for the Fifth Growing Season continue to be met in later years.

Early Maintenance Activities for Prairie Through 2022

Herbicide Applications: Herbicide shall be applied to perennial weeds such as Canada thistle or woody plants that invade the areas seeded with prairie seed. The herbicide used shall be the most selective possible given the target species and shall be applied only to the target species to the extent practicable. Herbicide shall not be applied to annual weeds unless they cannot be controlled by mowing or burning and if they have a developed a monoculture that precludes native grasses.

Prescribed Burning: The primary management tool for prairies is prescribed burning. Prescribed burning simulates the effects of wildfires that were part of Wisconsin's pre-settlement environment in which native plant communities, including prairies, thrived. Native prairie grasses, including those species planted at the site, develop deep roots and buds beneath the soil, enabling them to withstand the heat of a fire. The deep roots of native prairie plants also stabilize the site after a fire and enable native prairie plants to quickly regenerate. The Wisconsin Department of Natural Resources has additional information regarding prescribed burning and its benefits to native plant communities, such as prairies, on its website at: http://dnr.wi.gov/topic/wildlifehabitat/burn.html.

Because fire is a critical element in sustaining native prairies, prescribed burning will be used as a management tool at the site. If fuel levels allow, seeded areas may be burned in the spring of 2020 or 2021. Prescribed burning will only occur if fuel levels and weather conditions are appropriate to ensure a prescribed burn can be conducted in a safe and controlled manner and that the site will benefit ecologically from the burn. Because burning will occur at the earliest in the fourth growing season after native vegetation is well-established, nutrient runoff is not expected. However, after a burn is conducted, the site will be monitored for any erosion issues. If erosion issues are identified, they will be addressed pursuant to the below sections titled, "Methods to Address Minor Erosion Control Concerns" and "Methods to Address Effects of Catastrophic and Anomalous Events."

Long-Term Maintenance and Management of Prairie after 2022

Prescribed Burning: As described in the immediately preceding section, the primary management tool for prairies is prescribed burning. Prescribed burning is ecologically beneficial to native prairie plants and will be used as a management tool, as appropriate, to ensure the continued health of the prairie at the

site. Generally speaking, after 2022, one third of the site should be burned every year, creating a 3 year rotation. However, certain weeds and woody invasive species may be controlled with more or less frequent fire. In light of that, the determination of which area will be burned and when that area will be burned will be based on the best judgment of the inspector and his/her prescription for maintenance activities.

Prescribed burning will only occur if fuel levels and weather conditions are appropriate to ensure a prescribed burn can be conducted in a safe and controlled manner and that the site will benefit ecologically from the burn. Because burning will occur when the site is well-established, nutrient runoff is not expected. However, after a burn is conducted, the site will be monitored for any erosion issues. If erosion issues are identified, they will be addressed pursuant to the below sections titled, "Methods to Address Minor Erosion Control Concerns" and "Methods to Address Effects of Catastrophic and Anomalous Events."

Herbicide Applications: Management of some invasive species can often only be accomplished through the use of herbicides. Herbicide shall be applied to perennial weeds such as Canada thistle or woody plants that invade the areas seeded with prairie seed. The herbicide used shall be the most selective possible given the target species and shall be applied only to the target species to the extent practicable. Herbicide shall not be applied to annual weeds unless they cannot be controlled by burning and if they have a developed a monoculture that precludes native grasses.

Site Inspections

The site will be inspected one time each during the spring, summer, and fall in the second, third, and fourth growing seasons. Thereafter, the site will be inspected once on an annual basis. This annual inspection will occur between mid-August and mid-September of each year. All inspections will be done by Carl Korfmacher of Midwest Prairies, LLC or an equally qualified individual. The site inspections will ensure compliance with seed establishment standards and identify any erosion issues. The site will also be inspected following any major events that could cause erosion as soon as the safety of the inspector can be assured, and if any erosion issues are identified, they will be addressed in accordance with the seed establishment standards above and erosion control sections below. During inspections, the inspector will walk the site and take close-up and distant photos of the site. The inspector will also take notes regarding plant diversity, density, overall ecological health, and any erosion issues. Based on those findings, a more detailed prescription for remedial and maintenance activities will be developed that will ensure that consistent, perennial native cover remains on the site. If the inspection identifies areas at the site that are not meeting the applicable seed establishment standards for the growing season, the remedial action identified in each standard will be taken. If the inspection identifies erosion issues, they

will be addressed pursuant to the sections in this Plan titled “Methods to Address Minor Erosion Control Concerns” and “Methods to Address Effects of Catastrophic and Anomalous Events.”

The inspection reports and associated documentation will be submitted to the Wisconsin Department of Natural Resources with the Belgioioso Cheese Annual Report, which is described in the Water Quality Trading Plan.

Methods to Address Minor Erosion Control Concerns

The site will be inspected for any bare spots, gullies, or other erosion control concerns. Erosion concerns will be addressed as follows:

- If bare spots larger than five square yards are identified during the growing season (May 15 through September 30), they will be immediately reseeded with cover crop and covered with a light straw mulch.
- If bare spots larger than five square yards occur outside the growing season, they will be addressed with temporary erosion matting, mulching, or the application of polyacrylamide, as necessary. Erosion events that occur outside of the growing season will be seeded with cover crop once the growing season begins.
- In the event of a major erosion event, such as the formation of a gully greater than one foot wide and one foot deep, the area will be regraded first and then reseeded per above.

All bare spots or gullies described above will also be reseeded with native grasses. Reseeding of native grasses in eroded areas must occur prior to July 15 or after November 1. Any eroded areas that are reseeded will be treated as newly established prairie and must meet the requirements for each growing season per the standards in the Establishment Plan and listed above.

Methods to Address Effects of Catastrophic and Anomalous Events

Certain catastrophic events may require the development of a more intense and urgent plan than the events outlined under the “Methods to Address Minor Erosion Control Concerns” above. These primarily include events that would cause flooding. For instance, in 1996 the Joliet, Illinois, area received over seventeen inches of rain in less than 48 hours. The level of flooding and related erosion was greater than had ever been experienced. Should such an event take place, it would be very difficult if not impossible to address while the event was in progress.

It is impossible to predict all the potential catastrophic or anomalous events that could cause significant damage to prairie plantings. If a catastrophic or anomalous event occurs, a site inspection would be done as soon as the safety of the inspector can be assured and an emergency plan will be developed and implemented promptly following inspection unless weather or other conditions indicate it should be

implemented later. The emergency plan will be consistent with the standards and practices outlined in the Establishment Plan and this Plan to ensure native perennial cover remains consistently throughout the site.

If a catastrophic flood event occurs during the growing season, an erosion plan that includes practices that closely resemble the standards and practices outlined in the Establishment Plan and in this Plan would be developed and implemented. If such an event occurred in mid-September or later, it would be impossible to establish cover prior to winter. Therefore, an erosion plan that includes standard physical erosion control structures would have to be prepared and implemented. This might include placing silt fence, straw wattles or perhaps even the excavation of a settling basin, if so warranted. In addition, a plan would be developed for the next growing season to grade if necessary and reseed in accordance with the standards and practices outlined in the Establishment Plan and this Plan. That plan would be implemented prior to July 1 of that growing season unless weather or other conditions indicate that it should be implemented later.

Other catastrophic events may be wind-based events, such as a tornado or intense straight-line winds, and these may cause trees to fall into the site from the surrounding fence lines. A site inspection would be done as soon as the safety of the inspector can be assured. Any fallen trees will be promptly removed and to the extent the prairie plantings are damaged, erosion issues will be addressed and the area reseeded per the standards and practices above.

Vandalism is another possible hazard. This would most likely involve off road vehicles illegally accessing the property and creating ruts. Ruts would be promptly filled, erosion issues would be addressed, and the area would be reseeded per the standards and practices above.

As previously stated, it is impossible to predict all the possible hazards. However, prairie plantings, in the form of Conservation Reserve Program plantings, private prairies, and remnant prairie plant communities have been shown to be exceptionally resilient in the face of disturbance.

Plan Preparation

This Plan was prepared by Carl Korfmacher, Owner, Midwest Prairies, LLC, 11847 Washington Road Edgerton, WI 53534, 800.382.1132, on behalf of The Probst Group and Belgioioso Cheese for inclusion in the Water Quality Trading Plan.