

Permit Fact Sheet

General Information

Permit Number:	WI-0065455-01-0
Permittee Name:	Anderson Custom Processing
Address:	P O Box 76 220 Serv-Us Street
City/State/Zip:	Belleville WI 53508
Discharge Location:	NW ¼ of the SE ¼ of Section 34, Township 5 North, Range 8 East.
Receiving Water:	Sugar River, (Upper Sugar Watershed – SP15 of the Sugar Pecatonica Rivers Basin) in Dane County
StreamFlow (Q _{7,10}):	34 cfs
Stream Classification:	Warm water sport fish community and an exceptional resource water at the discharge site according to chs. NR 102 and 104 Wis. Admin. Code. The Sugar River is not classified as a public water supply.

Facility Description

Anderson Custom Processing is located in Belleville, Wisconsin (Dane County). This facility provides custom spray drying services for food, beverage, infant formula, pharmaceuticals, as well as hair care, cosmetic and paper products industries. Non-contact cooling water is discharged directly into Sugar Creek. Wastewater containing a mixture of corn starch process water and softer regeneration water is stored on-site in two tanks (one 22,000 gallon capacity below ground concrete basin and one 17,000 gallon above ground storage tank) prior to being land applied under NR 214 Wis. Adm. Code. The average annual wastewater volume land applied is approximately 15,000 gpd. Process wastewaters are, at times, treated for pH adjustment prior to landspreading. The wastewater does not include any sanitary wastewater. The facility previously used an independent contractor to land spread wastewaters and had coverage under WPDES general permit no. WI-0044938-05-0 for noncontact cooling water discharge.

Proposed Permit Reissuance

The Department anticipates an effective date of January 1, 2015 for the proposed permit. Therefore, to allow for a full permit term of five years, the proposed permits' expiration date is December 31, 2019. If the permit reissuance process takes more or less time than anticipated, the permit's dates of effectiveness and expiration may be changed accordingly.

Sampling Point Designations

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/sample Contents and Treatment Description (as applicable)
001	0.082 mgd annual average	Sampling Point (Outfall) 001, which is located at the end of pipe on the north bank of the Sugar River in the NW 1/4 of the SE 1/4 of Section 34, Township 5 North, Range 8 East, is a representative sample of the noncontact cooling water surface water discharge.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/sample Contents and Treatment Description (as applicable)
002	15,150 gpd (2013)	Sampling Point (Outfall) 002, which is located in the NE 1/4 of the SW 1/4 of Section 34, Township 5 North, Range 8 East, is a representative sample of wastewater taken from Anderson Custom Processing's storage tanks. The tanks include a 22,000 gallon capacity below grade concrete basin and a 17,000 gallon above ground storage tank. Process wastewater is land applied on approved land application sites.

1 Surface Water - Proposed Monitoring and Limitations

1.1 Sample Point Number:001- Noncontact Cooling Water

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Monthly	Total Monthly	
BOD5, Total		mg/L	Annual	Grab	
Suspended Solids, Total		mg/L	Annual	Grab	
pH Field		su	Annual	Grab	
Oil & Grease (Hexane)		mg/L	Annual	Grab	
Temperature Maximum		deg F	Annual	Grab	
Temperature Maximum		deg F	3/Week	Grab	Monitoring only Jan 1, 2018 through Dec 31, 2018
Nitrogen, Ammonium (NH4-N) Total		mg/L	Annual	Grab	
Phosphorus, Total		mg/L	Annual	Grab	
Phosphorus, Total		mg/L	Monthly	Grab	Monitoring only Jan 1, 2018 through Dec 31, 2018

1.1.1 Changes from Previous Permit (General Permit)

Noncontact cooling water discharge was previously covered under the Statewide General Permit (WPDES Permit No. WI-0044938-05-0). Wastewater was land applied by an independent contractor until fall 2014 when they began to land spread wastewater themselves. This change in landspreading operations required that Anderson Custom Processing

receive a specific permit for landspreading of wastewaters. This permit issuance includes coverage for discharge of noncontact cooling water discharges to include all operations under one permit that require WPDES permit coverage.

The monitoring required under this permit is reflective of requirements of the general permit and ss. 283.31(5) and 283.55(1), Wis. Stats. Monitoring for these two parameters was increased for the fourth year of the permit term for use during permit reissuance.

1.1.2 Explanation of Limits and Monitoring Requirements

Water Quality Based Limits and WET Requirements and Disinfection (if applicable)

Flow, BOD₅, oil and Grease, and Ammonia Nitrogen –The current general permit allows sampling for Oil and Grease, BOD₅, and ammonia nitrogen to be waived by the Department following sufficient data submittal. Annual monitoring will provide data required for permit reissuance.

TSS and pH – Annual sampling during the permit term is included. Anderson Custom Processing surface water discharge does not include boiler blowdown or boiler bled-off therefore minimum sampling is included. After completing an analysis of the available effluent data the Department has determined that there is no reasonable potential to exceed the limitations in the current general permit.

Temperature - New surface water quality standards for temperature took effect on October 1, 2010. These new regulations are detailed in Chapter NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. These revisions establish criteria to calculate thermal limits. An analysis of these data shows that a temperature limitation would be 120°F. Thermal discharges must meet the Public Health criterion of 120 degrees F and the Fish & Aquatic Life criteria which are established to protect aquatic communities from lethal and sub-lethal thermal effects. However, the water quality based calculated effluent limit does not have a reasonable potential to be exceeded. Annual Monitoring and additional monitoring in the fourth year of the permit term 3/week is included for use in permit reissuance (see WQBEL).

Phosphorus - Phosphorus requirements are based on the Phosphorus Rules that became effective 12/1/2010 as detailed in NR 102 Water Quality Standards and NR 217 Effluent Standards and Limitations for Phosphorus. Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. These standards are not currently included in the noncontact cooling water general permit that Anderson Custom Processing had coverage under. The code categorically limits industrial dischargers of more than 60 pounds of phosphorus per month to 1.0 mg/L unless an alternative limit is approved. NR 217 also specifies WQBELs (water quality based effluent limits) for discharges of phosphorus to surface waters of the state from noncontact cooling water discharges which contain phosphorus.

WQBELs for phosphorus are needed whenever the discharge contains phosphorus at concentrations or loadings that will cause or contribute to an exceedance of the water quality standards. The effluent data available shows that phosphorus is not present in the noncontact cooling water discharge therefore, annual monitoring and additional monitoring in the fourth year of the permit term for permit reissuance has been included (see WQBEL).

2 Land Application - Sludge/By-Product Solids (industrial only)

2.1 Sample Point Number:002- Land Application Outfall

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
COD		mg/L	Monthly	Grab	
pH Field		su	Monthly	Grab	
Phosphorus, Total		mg/L	Monthly	Grab	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Chloride		mg/L	Monthly	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	Grab	
Potassium, Total Recoverable		mg/L	Monthly	Grab	

2.1.1 Explanation of Limits and Monitoring Requirements

Anderson Custom Processing previously used an independent contractor for landspreading of wastewaters. Operational changes result in Anderson Custom Processing landspreading the wastewaters under this permit. For calendar year 2014, Anderson Custom Processing land spread wastewaters under a general permit. However, the total volume of wastewaters is over the maximum volumes allowed under the general permit. The Department completed an analysis of the monitoring, limitations and reporting requirements that have previously been completed by the independent contractor for Anderson Custom Processing's wastewaters and determined that based on total volume discharged monthly sampling is required to be consistent with other specific permits with similar discharge volumes. The sampling parameters have been included from Ch. NR 214 Wis. Admin. Code.

Anderson Custom Processing currently has 24 approved landspreading sites totaling 460.5 acres. An updated Land Management Plan is required within six months of permit issuance. Anderson Custom Processing may, under specific conditions, discharge wastewater to a manure storage pit with the prior approval of the Department under s. NR 214.17)1_ Wis. Admin Code. The daily log requirements in the permit include required reporting if discharging to a manure storage pit. This reporting is only required when actively discharging to a manure storage pit.

Sampling is only required during periods of active discharge, defined as pumping of wastewaters to a land application site in a monthly period.

3 Compliance Schedules

3.1 Land Application Management Plan

This compliance schedule requires the permittee to supply an updated land management plan.

Required Action	Due Date
Management Plan: Submit a management plan to optimize the land application system performance and demonstrate compliance with Wisconsin Administrative Code NR 214. In addition to the information specifically identified in s. NR 214.17(6) Wis. Adm. Code, the management plan shall address: 1) volume determination and monitoring, 2) notifying the Department staff of land application sites that will be used, 3) record keeping and maintenance (including responsible individuals), 4) a full description of calculations used to determine appropriate application rates and loadings delivered, 5) tracking of site loadings, 6) notification and mitigation procedures for handling wastes that deviate from those anticipated, 7) discharges to offsite manure storage structures, and 8) odor control. Any changes to the approved plan must be submitted in writing to the Department and approved prior to initiating those changes.	06/30/2015

3.2 Storage Tank Evaluation

This compliance schedule requires the permittee to have the two onsite tanks inspected once during the permit term in compliance with ch. NR 213 Wis. Admin. Code.

Required Action	Due Date
Storage Tank Evaluation Report: Submit a storage structure evaluation report by a professional engineer validating that the Ch. NR 213 Wisconsin Adm. Code requirements. Along with this evaluation, the permittee shall evaluate secondary containments for all storage structures. If any issues are identified, the permittee will submit a repair/replacement plan with proposed timeline for completion with this evaluation report.	01/01/2017
Complete Actions: Complete actions necessary to repair/replace storage structure as described in the evaluation report.	

3.3 Explanation of Compliance Schedules

Anderson Custom Processing has an approved Land Management Plan. An updated plan is required within six month of permit issuance. In addition, throughout the permit term the permittee shall notify the Department in writing and receive approval before making any changes to the approved Land Management Plan.

There are currently two storage tanks on site for storage of wastewater. A storage structure evaluation for all structures under Ch. NR 214 Wis. Admin Code is required within the first two years of the permit term. This evaluation is to include an evaluation of secondary containment for any above ground storage structures because of the proximity to Sugar River, an exceptional resource water.

Attachments

This is an initial permit issuance and therefore there is no substantial compliance inspection. Prior to permit issuance, the Department did an inspection of the facility and found that the operations are in substantial compliance with the general permit.

Map(s)

Water Quality Based Effluent Limits

Public Notice

Proposed Expiration Date:

December 31, 2019

Prepared By:

Jennifer Jerich, Wastewater Specialist

David Brick, Wastewater Specialist

Steve Warrner, Wastewater Specialist

Date: October 1, 2014

DATE: October 29, 2014

FILE REF: 3200

TO: Jennifer Jerich - SCR/Horicon

FROM: Nasrin Mohajerani – SCR *N. Mohajerani*

SUBJECT: Water Quality-Based Effluent Limitations for the Anderson Custom Processing (ACP) WPDES Permit No. WI-0044938

This is in response to your request for an evaluation of the need for water quality-based effluent limitations using Chapters NR 102, 104, 105, 106, 207, 210 and 217 of the Wisconsin Administrative Code (where applicable), for the discharge of noncontact cooling water from the Anderson Custom Processing Plant in Dane County. This industrial plant discharges to the Sugar River, located in the in the Allen Creek and Middle Sugar River Watershed (SP13) of the Sugar Pecatonica Rivers Basin. The evaluation of the permit recommendations is discussed in more detail in the attached report.

This discharge is covered under general permit No. WI-0044938 and this would be the first specific permit for noncontact cooling water discharge issued to this facility.

Based The current WPDES permit No. WI-0044938Based on our review, the following recommendations are made for specific permit issuance. Temperature was evaluated based on water quality effluent limits. All other monitoring and/or limit recommendations are based on the requirements of their existing permit.

Parameter	Daily Maximum	Daily Minimum	Monthly Average	Monitoring Only
Flow				X
BOD5*				X
TSS*	40 mg/L			
pH *	9.0 s.u.	6.0 s.u.		
Temperature	120° F			
Ammonia*				X
Phosphorous*				X

Footnotes:

*- From previous general permit

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Nasrin Mohajerani by telephone at (608) 275-3239 or by email at nasrindoknt.mohajerani@wisconsin.gov.

Attachments (1) – Thermal calculations

Attachment #2 is a USGS topographic map of the area showing the approximate location of Outfall 001.



PREPARED BY:

N. Mohajerani

Nasrin Mohajerani
Water Resources Engineer, P.E.

cc:

Diane Figiel – WY/3
Amanda Mink – WY/3

**Water Quality-Based Effluent Limitations for
Anderson Custom Processing**

WPDES Permit No. WI-0044938
Prepared by: Nasrin Mohajerani

PART 1 – BACKGROUND INFORMATION

Facility Description:

Anderson Custom Processing is located in Belleville, Wisconsin (Dane County). This facility provides custom spray drying services for food, beverage, infant formula, pharmaceuticals, as well as hair care, cosmetic and paper products industries. Non-contact cooling water is discharged directly into Sugar Creek. Wastewater containing a mixture of starch process water and softer regeneration water is stored on-site in above-ground tanks prior to being land applied under NR 214 Wis. Adm. Code.

Existing Permit Limitations: Anderson facility currently discharges NCCW under General Permit (GP-0044938-05-0). The facility has changed management practices for land application that require a specific permit, therefore the NCCW permit coverage will be included in the specific permit to regulate the facility under one permit. The NCCW GP currently includes the following effluent limitations.

Parameter	Daily Maximum	Daily Minimum	Monitoring Only
Flow			X
BOD5*			X
TSS*	40 mg/L		
pH *	9.0 s.u.	6.0 s.u.	
Temperature	120° F		
Oil and Grease			X
Ammonia*			X
Phosphorous*			X

*-These limitations are not being evaluated as part of this review.

Receiving Water Information:

- Name: Sugar River

Classification: Warmwater sport fish community and an exceptional resource water at the discharge site according to chs. NR 102 and 104. The Sugar River is not classified as a public water supply.

- Low Flow:
7-Q₁₀ = 34 cfs (cubic feet per second)
7-Q₂ = 49 cfs
- % of Flow used to calculate limits : 25%

The receiving water flows used in establishing effluent limitations were obtained from the U.S. Geological Survey based on flow information obtained at NE 1/4, SW 1/4, of SEC. 34, T5N-R8E at bridge on U.S. HWY 69 at Belleville.

Effluent Information:

- Flow:
 - Annual average = 0.082379 MGD (Million Gallons per Day)
 - Peak daily = 0.15 MGD
 - Peak weekly = 0.11 MGD
 - Peak monthly = 0.106667 MGD

Actual flow data availability is limited for this facility. It is recommended that flow data be collected during the permit term for next permit reissuance.

- Effluent characterization: This facility is categorized as a minor industrial discharge of noncontact cooling water so the permit application required effluent sample analyses for a limited number of common pollutants, primarily temperature and suspended solids.
- Water Source: Private well
- Additives: None

Outfall Location: Outfall 001, is located in the NW ¼ of SE ¼ of Section 34 (T5N, R8E) in Dane County (see the attached map).

**PART 2 – WATER QUALITY-BASED EFFLUENT LIMITATIONS
FOR TOXIC SUBSTANCES – EXCEPT AMMONIA NITROGEN**

Because ACP discharges noncontact cooling water with no additives, there is no potential to trigger water quality based effluent limits for toxic substances.

PART 3 – AMMONIA

Since this is only NCCW discharge ammonia is not expected to be present in the effluent.

PART 4 –PHOSPHORUS

According to information in their application phosphorus is not present in their discharge.

PART 5 - THERMAL

New surface water quality standards for temperature took effect on October 1, 2010. These new regulations are detailed in Chapter NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. The following table is used to screen the need to calculate limitations for temperature:

Warm Water and Limited Forage Fish designated waters	Effluent Temperature Limitation
$Q_s:Q_e \geq 20:1$	120°F (no calculation needed)
$20:1 > Q_s:Q_e > 2:1$	120°F or the sub-lethal WQBEL (calculation needed), whichever is lower
$Q_s:Q_e \leq 2:1$	Sub-Lethal and Acute WQBELs (calculation needed)

Determination of $Q_s:Q_e$

For unidirectional (stream) flow Q_s is determined by using 25% of the $7Q_{10}$. Q_e is the design effluent flow.

$7Q_{10}$ (cfs)	Q_s (25% of $7Q_{10}$) (cfs)	Q_e	$Q_s:Q_e$
34	8.5	0.082379 MGD = 0.127 cfs	67 : 1

Due to the large amount of dilution available in the Sugar River, the effluent limits are 120°F as a daily maximum for every month of the year.

The maximum effluent temperatures reported by Anderson throughout the year is 80 °F during perivious permit. Comparing the representative highest effluent temperature to the calculated limits determines no reasonable potential of exceeding the effluent limit. No daily maximum and weekly average limits are recommended. Due to the nature of this discharge monitoring is recommended.

Attachment #1

Temperature limits for receiving waters with unidirectional flow												
(calculation using default ambient temperature data)												
Facility:	Anderson			Data Range	7Q10 or 4Q3:	34	cfs					
Outfall(s):	001		Start:	01/02/11	Dilution:	25%						
Date Prepared:	27-Aug-14		End:	06/30/14	f:	0						
Design Flow (Qe):	0.082	mgd			Stream type:	Small warm water sport or forage fish community ▼						
Region:	SC				Qs:Qe ratio:	67.0	:1					
					Calculation Needed?	NO						
Water Quality Criteria				Receiving Water Flow Rate (Qs)	Representative Highest Effluent Flow Rate (Qe)		Representative Highest Monthly Effluent Temperature		99th Percentile of Representative Data		Calculated Effluent Limits	
Month	Ta (default)	Sub-Lethal WQC	Acute WQC		7-day Rolling Ave (Qesl)	Daily Max Flow Rate (Qea)	Weekly Ave	Daily Max	Weekly Ave	Daily Max*	Weekly Ave Limit	Daily Max Limit
	(°F)	(°F)	(°F)	(cfs)	(mgd)	(mgd)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)
JAN	33	49	76	34	0.082	0.082	80	80	80	80	-	120
FEB	34	50	76	34	0.082	0.082	80	80	80	80	-	120
MAR	38	52	77	34	0.082	0.082	80	80	80	80	-	120
APR	48	55	79	34	0.082	0.082	80	80	80	80	-	120
MAY	58	65	82	34	0.082	0.082	80	80	80	80	-	120
JUN	66	76	84	34	0.082	0.082	80	80	80	80	-	120
JUL	69	81	85	34	0.082	0.082	80	80	80	80	-	120
AUG	67	81	84	34	0.082	0.082	80	80	80	80	-	120
SEP	60	73	82	34	0.082	0.082	80	80	80	80	-	120
OCT	50	61	80	34	0.082	0.082	80	80	80	80	-	120
NOV	40	49	77	34	0.082	0.082	80	80	80	80	-	120
DEC	35	49	76	34	0.082	0.082	80	80	80	80	-	120

Attachment #2

