17-0803

Compliance Maintenance Annual Report

Manitowoc Wastewater Treatment Facility

Last Updated: 7/11/2017 Reporting For: **2016**

Influent Flow and Loading

1. Monthly Average Flows and (C)BOD Loadings

1.1 Verify the following monthly flows and (C)BOD loadings to your facility.

Outfall No. 701	Influent Monthly Average Flow, MGD	x	Influent Monthly Average (C)BOD Concentration mg/L	x	8.34	=	Influent Monthly Average (C)BOD Loading, lbs/day
January	7.3757	x	288	x	8.34	=	17,685
February	7.0918	x	319	x	8.34	=	18,886
March	9.7753	x	220	x	8.34	=	17,957
April	9.2702	x	249	x	8.34	=	19,270
May	6.9569	x	322	x	8.34	=	18,702
June	7.1206	x	289	x	8.34	=	17,169
July	7.2149	x	330	x	8.34	=	19,878
August	6.8640	x	367	x	8.34	=	21,024
September	7.2615	x	367	x	8.34	=	22,235
October	6.7904	x	553	x	8.34	=	31,298
November	6.0138	x	479	x	8.34	=	24,009
December	6.2777	x	323	x	8.34	=	16,905

2. Maximum Monthly Design Flow and Design (C)BOD Loading

2.1 Verify the design flow and loading for your facility.

Design	Design Factor	x	%	=	% of Design
Max Month Design Flow, MGD	19	x	90	=	17.1
		x	100	=	19
Design (C)BOD, lbs/day	37500	x	90	=	33750
		x	100	=	37500

2.2 Verify the number of times the flow and (C)BOD exceeded 90% or 100% of design, points earned, and score:

	Months of Influent	Number of times flow was greater than 90% of	Number of times flow was greater than 100% of	Number of times (C)BOD was greater than 90% of design	Number of times (C)BOD was greater than 100% of design
January	1	0	0	0	0
February	1	0	0	0	0
March	1	0	0	0	0
April	1	0	0	0	0
May	1	0	0	0	0
June	1	0	0	0	0
July	1	0	0	0	0
August	1	0	0	0	0
September	1	0	0	0	0
October	1	0	0	0	0
November	1	0	0	0	0
December	1	0	0	0	0
Points per each		2	1	3	2
Exceedances		0	0	0	0
Points		0	0	0	0
Total Number of Points					**0**

0

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3. Flow Meter

3.1 Was the influent flow meter calibrated in the last year?

● Yes Enter last calibration date (MM/DD/YYYY): 2016-06-02

○ No

If No, please explain:

4. Sewer Use Ordinance

4.1 Did your community have a sewer use ordinance that limited or prohibited the discharge of excessive conventional pollutants ((C)BOD, SS, or pH) or toxic substances to the sewer from industries, commercial users, hauled waste, or residences?

● Yes

○ No

If No, please explain:

4.2 Was it necessary to enforce the ordinance?

○ Yes

● No

If Yes, please explain:

5. Septage Receiving

5.1 Did you have requests to receive septage at your facility?

Septic Tanks	Holding Tanks	Grease Traps
● Yes	● Yes	○ Yes
○ No	○ No	● No

5.2 Did you receive septage at your faclity? If yes, indicate volume in gallons.

Septic Tanks

● Yes 2,247,350 gallons

○ No

Holding Tanks

● Yes 1,943,715 gallons

○ No

Grease Traps

○ Yes gallons

● No

5.2.1 If yes to any of the above, please explain if plant performance is affected when receiving any of these wastes.

The WWTF operates well under hydraulic and organic loading rates. Acceptance of hauled waste is limited or cut off during storm or high flow events. Grease trap waste is not accepted as there are no means for handling this type of waste.

6. Pretreatment

6.1 Did your facility experience operational problems, permit violations, biosolids quality concerns, or hazardous situations in the sewer system or treatment plant that were attributable to commercial or industrial discharges in the last year?

○ Yes

● No

If yes, describe the situation and your community's response.

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6.2 Did your facility accept hauled industrial wastes, landfill leachate, etc.?

- ● Yes
- ○ No

If yes, describe the types of wastes received and any procedures or other restrictions that were in place to protect the facility from the discharge of hauled industrial wastes.

Landfill leachate is accepted provided analytical data does not exceed local limits in Chapter 25 of the City of Manitowoc Municipal Code. In 2016, a total of 17,090,250 gallons of leachate were accepted and treated.

Total Points Generated	0
Score (100 - Total Points Generated)	100
Section Grade	**A**

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Effluent Quality and Plant Performance (BOD/CBOD)

1. Effluent (C)BOD Results

1.1 Verify the following monthly average effluent values, exceedances, and points for BOD or CBOD

Outfall No. 001	Monthly Average Limit (mg/L)	90% of Permit Limit > 10 (mg/L)	Effluent Monthly Average (mg/L)	Months of Discharge with a Limit	Permit Limit Exceedance	90% Permit Limit Exceedance
January	30	27	10	1	0	0
February	30	27	17	1	0	0
March	30	27	14	1	0	0
April	30	27	16	1	0	0
May	30	27	25	1	0	0
June	30	27	13	1	0	0
July	30	27	16	1	0	0
August	30	27	13	1	0	0
September	30	27	13	1	0	0
October	30	27	22	1	0	0
November	30	27	15	1	0	0
December	30	27	14	1	0	0
* Equals limit if limit is <= 10						
Months of discharge/yr				12		
Points per each exceedance with 12 months of discharge					7	3
Exceedances					0	0
Points					0	0
Total number of points						**0**

0

NOTE: For systems that discharge intermittently to state waters, the points per monthly exceedance for this section shall be based upon a multiplication factor of 12 months divided by the number of months of discharge. Example: For a wastewater facility discharging only 6 months of the year, the multiplication factor is 12/6 = 2.0

1.2 If any violations occurred, what action was taken to regain compliance?

No Violations in 2016.

2. Flow Meter Calibration

2.1 Was the effluent flow meter calibrated in the last year?

o Yes Enter last calibration date (MM/DD/YYYY)

● No

If No, please explain:

There is no effluent flow meter since 2009.

3. Treatment Problems

3.1 What problems, if any, were experienced over the last year that threatened treatment?

No problems in 2016.

4. Other Monitoring and Limits

4.1 At any time in the past year was there an exceedance of a permit limit for any other pollutants such as chlorides, pH, residual chlorine, fecal coliform, or metals?

o Yes

● No

If Yes, please explain:

4.2 At any time in the past year was there a failure of an effluent acute or chronic whole effluent toxicity (WET) test?

- ○ Yes
- ● No

If Yes, please explain:

4.3 If the biomonitoring (WET) test did not pass, were steps taken to identify and/or reduce source(s) of toxicity?

- ○ Yes
- ○ No
- ● N/A

Please explain unless not applicable:

Total Points Generated	0
Score (100 - Total Points Generated)	100
Section Grade	**A**

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Effluent Quality and Plant Performance (Total Suspended Solids)

1. Effluent Total Suspended Solids Results

1.1 Verify the following monthly average effluent values, exceedances, and points for TSS:

Outfall No. 001	Monthly Average Limit (mg/L)	90% of Permit Limit >10 (mg/L)	Effluent Monthly Average (mg/L)	Months of Discharge with a Limit	Permit Limit Exceedance	90% Permit Limit Exceedance
January	30	27	4	1	0	0
February	30	27	4	1	0	0
March	30	27	4	1	0	0
April	30	27	4	1	0	0
May	30	27	4	1	0	0
June	30	27	3	1	0	0
July	30	27	4	1	0	0
August	30	27	4	1	0	0
September	30	27	3	1	0	0
October	30	27	7	1	0	0
November	30	27	7	1	0	0
December	30	27	4	1	0	0
* Equals limit if limit is <= 10						
Months of Discharge/yr				12		
Points per each exceedance with 12 months of discharge:					**7**	**3**
Exceedances					0	0
Points					0	0
Total Number of Points						**0**

0

NOTE: For systems that discharge intermittently to state waters, the points per monthly exceedance for this section shall be based upon a multiplication factor of 12 months divided by the number of months of discharge.

Example: For a wastewater facility discharging only 6 months of the year, the multiplication factor is 12/6 = 2.0

1.2 If any violations occurred, what action was taken to regain compliance?

Total Points Generated	0
Score (100 - Total Points Generated)	100
Section Grade	**A**

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Biosolids Quality and Management

1. Biosolids Use/Disposal

1.1 How did you use or dispose of your biosolids? (Check all that apply)

- ☒ Land applied under your permit
- ☐ Publicly Distributed Exceptional Quality Biosolids
- ☐ Hauled to another permitted facility
- ☐ Landfilled
- ☐ Incinerated
- ☐ Other

NOTE: If you did not remove biosolids from your system, please describe your system type such as lagoons, reed beds, recirculating sand filters, etc.

1.1.1 If you checked Other, please describe:

2. Land Application Site

2.1 Last Year's Approved and Active Land Application Sites

2.1.1 How many acres did you have?

7422.70 acres

2.1.2 How many acres did you use?

466 acres

2.2 If you did not have enough acres for your land application needs, what action was taken?

2.3 Did you overapply nitrogen on any of your approved land application sites you used last year? **0**

- o Yes (30 points)
- ● No

2.4 Have all the sites you used last year for land application been soil tested in the previous 4 years?

- ● Yes
- o No (10 points)
- o N/A

3. Biosolids Metals

Number of biosolids outfalls in your WPDES permit:

3.1 For each outfall tested, verify the biosolids metal quality values for your facility during the last calendar year.

Outfall No. 003 - Cake Sludge

Parameter	80% of Limit	H.Q. Limit	Ceiling Limit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	80% Value	High Quality	Ceiling
Arsenic		41	75	0		0		0		0		0		0			0	0
Cadmium		39	85	0		0		0		0		0		0			0	0
Copper		1500	4300	0		0		0		0		0		0			0	0
Lead		300	840	0		0		0		0		0		0			0	0
Mercury		17	57	0		0		0		0		0		0			0	0
Molybdenum	60		75	0		0		0		0		0		0		0		0
Nickel	336		420	0		0		0		0		0		0		0		0
Selenium	80		100	0		0		0		0		0		0		0		0
Zinc		2800	7500	0		0		0		0		0		0			0	0

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Outfall No. 002 - Liquid Sludge

Parameter	80% of Limit	H.Q. Limit	Ceiling Limit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	80% Value	High Quality	Ceiling
Arsenic		41	75	16.9		14.7		4.57		15		19		14			0	0
Cadmium		39	85	1.15		.74		.656		.49		1.25		.73			0	0
Copper		1500	4300	717		645		700		663		629		633			0	0
Lead		300	840	19.2		14.8		19.9		19		16.1		20			0	0
Mercury		17	57	.463		.744		.438		.737		5.89		.73			0	0
Molybdenum	60		75	12.7		12.1		13.5		14		10.8		11		0		0
Nickel	336		420	106		89.3		76.5		79		83.1		80		0		0
Selenium	80		100	3.65		5.28		4.77		4.79		3.77		1.61		0		0
Zinc		2800	7500	1875		1985		2013		2752		2846		3017			2	0

3.1.1 Number of times any of the metals exceeded the high quality limits OR 80% of the limit for molybdenum, nickel, or selenium = 2

Exceedence Points

- o 0 (0 Points)
- ● 1-2 (10 Points)
- o > 2 (15 Points)

3.1.2 If you exceeded the high quality limits, did you cumulatively track the metals loading at each land application site? (check applicable box)

- o Yes
- ● No (10 points)
- o N/A - Did not exceed limits or no HQ limit applies (0 points)
- o N/A - Did not land apply biosolids until limit was met (0 points)

3.1.3 Number of times any of the metals exceeded the ceiling limits = 0

Exceedence Points

- ● 0 (0 Points)
- o 1 (10 Points)
- o > 1 (15 Points)

3.1.4 Were biosolids land applied which exceeded the ceiling limit?

- o Yes (20 Points)
- ● No (0 Points)

3.1.5 If any metal limit (high quality or ceiling) was exceeded at any time, what action was taken? Has the source of the metals been identified?

The HQ Zinc result was back to back sample results in period Sept-Oct and again for Nov-Dec. Follow up was limited as Pretreatment inspections and reports were either completed or almost completed with no known source from industry. Hauled in waste is one other source that may have contributed.

10

4. Pathogen Control (per outfall):

4.1 Verify the following information. If any information is incorrect, use the Report Issue button under the Options header in the left-side menu.

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Outfall Number:	**002**
Biosolids Class:	B
Bacteria Type and Limit:	Fecal Coliform
Sample Dates:	03/01/2016 - 04/30/2016
Density:	313
Sample Concentration Amount:	CFU/G TS
Requirement Met:	Yes
Land Applied:	No
Process:	
Process Description:	

Outfall Number:	**002**
Biosolids Class:	B
Bacteria Type and Limit:	Fecal Coliform
Sample Dates:	07/01/2016 - 08/31/2016
Density:	120
Sample Concentration Amount:	CFU/G TS
Requirement Met:	Yes
Land Applied:	Yes
Process:	
Process Description:	

Outfall Number:	**003**
Biosolids Class:	B
Bacteria Type and Limit:	Fecal Coliform
Sample Dates:	01/01/2016 - 02/29/2016
Density:	264
Sample Concentration Amount:	CFU/G TS
Requirement Met:	Yes
Land Applied:	No
Process:	
Process Description:	

Outfall Number:	**003**
Biosolids Class:	B
Bacteria Type and Limit:	Fecal Coliform
Sample Dates:	05/01/2016 - 06/30/2016
Density:	174
Sample Concentration Amount:	CFU/G TS
Requirement Met:	Yes
Land Applied:	Yes
Process:	
Process Description:	

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Outfall Number:	**003**
Biosolids Class:	B
Bacteria Type and Limit:	Fecal Coliform
Sample Dates:	09/01/2016 - 10/31/2016
Density:	555
Sample Concentration Amount:	CFU/G TS
Requirement Met:	Yes
Land Applied:	Yes
Process:	
Process Description:	

Outfall Number:	**003**
Biosolids Class:	B
Bacteria Type and Limit:	Fecal Coliform
Sample Dates:	11/01/2016 - 12/31/2016
Density:	409
Sample Concentration Amount:	CFU/G TS
Requirement Met:	Yes
Land Applied:	Yes
Process:	
Process Description:	

0

4.2 If exceeded Class B limit or did not meet the process criteria at the time of land application.

4.2.1 Was the limit exceeded or the process criteria not met at the time of land application?

- ○ Yes (40 Points)
- ● No

If yes, what action was taken?

5. Vector Attraction Reduction (per outfall):

5.1 Verify the following information. If any of the information is incorrect, use the Report Issue button under the Options header in the left-side menu.

Outfall Number:	**002**
Method Date:	04/30/2016
Option Used To Satisfy Requirement:	Injection when land apply
Requirement Met:	Yes
Land Applied:	No
Limit (if applicable):	
Results (if applicable):	

Outfall Number:	**002**
Method Date:	08/31/2016
Option Used To Satisfy Requirement:	Injection when land apply
Requirement Met:	Yes
Land Applied:	Yes
Limit (if applicable):	
Results (if applicable):	

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Outfall Number:	**003**
Method Date:	02/29/2016
Option Used To Satisfy Requirement:	Injection when land apply
Requirement Met:	Yes
Land Applied:	No
Limit (if applicable):	
Results (if applicable):	

Outfall Number:	**003**
Method Date:	06/30/2016
Option Used To Satisfy Requirement:	Injection when land apply
Requirement Met:	Yes
Land Applied:	Yes
Limit (if applicable):	
Results (if applicable):	

Outfall Number:	**003**
Method Date:	10/31/2016
Option Used To Satisfy Requirement:	Injection when land apply
Requirement Met:	Yes
Land Applied:	Yes
Limit (if applicable):	
Results (if applicable):	

Outfall Number:	**003**
Method Date:	12/31/2016
Option Used To Satisfy Requirement:	Injection when land apply
Requirement Met:	Yes
Land Applied:	Yes
Limit (if applicable):	
Results (if applicable):	

0

5.2 Was the limit exceeded or the process criteria not met at the time of land application?

- ○ Yes (40 Points)
- ● No

If yes, what action was taken?

6. Biosolids Storage

6.1 How many days of actual, current biosolids storage capacity did your wastewater treatment facility have either on-site or off-site?

- ● >= 180 days (0 Points)
- ○ 150 - 179 days (10 Points)
- ○ 120 - 149 days (20 Points)
- ○ 90 - 119 days (30 Points)
- ○ < 90 days (40 Points)
- ○ N/A (0 Points)

6.2 If you checked N/A above, explain why.

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	0

7. Issues

7.1 Describe any outstanding biosolids issues with treatment, use or overall management:

The Manitowoc Land Application program is in great shape with no shortage of approved application acreage. More land is certified than needed as crop rotations does make some fields unavailable for a few years when alfalfa is planted.

Total Points Generated	20
Score (100 - Total Points Generated)	80
Section Grade	**C**

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Staffing and Preventative Maintenance (All Treatment Plants)

1. Plant Staffing

1.1 Was your wastewater treatment plant adequately staffed last year?

- ● Yes
- ○ No

If No, please explain:

Could use more help/staff for:

The WWTF staff could be increased by an additional operator. Because the WWTF is staffed 24/7 365 there is always a challenge to keep coverage with the current number of operators. There are 2 Operators that work 2nd shift and 2 Operators that work 3rd shift. Then there are 2 daytime operators who role it is to fill in for shift operators when they have PTO, Sick, FMLA, etc...The current ratio is not working and the addition of one operator would relieve the 2 daytime operators and allow for granted PTO requests and more confined space work to be completed on a timely manner at the WWTF.

1.2 Did your wastewater staff have adequate time to properly operate and maintain the plant and fulfill all wastewater management tasks including recordkeeping?

- ● Yes
- ○ No

If No, please explain:

2. Preventative Maintenance

2.1 Did your plant have a documented AND implemented plan for preventative maintenance on major equipment items?

- ● Yes (Continue with question 2)
- ○ No (40 points)

If No, please explain, then go to question 3:

2.2 Did this preventative maintenance program depict frequency of intervals, types of lubrication, and other tasks necessary for each piece of equipment?

- ● Yes
- ○ No (10 points)

0

2.3 Were these preventative maintenance tasks, as well as major equipment repairs, recorded and filed so future maintenance problems can be assessed properly?

- ● Yes
  - ○ Paper file system
  - ○ Computer system
  - ● Both paper and computer system
- ○ No (10 points)

3. O&M Manual

3.1 Does your plant have a detailed O&M and Manufacturer Equipment Manuals that can be used as a reference when needed?

- ● Yes
- ○ No

4. Overall Maintenance /Repairs

4.1 Rate the overall maintenance of your wastewater plant.

- ○ Excellent
- ● Very good

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- o Good
- o Fair
- o Poor

Describe your rating:

The computerized preventative maintenance work order system is updated and followed each week. All work orders are completed, documented, and unscheduled repairs generated and completed. A filing system is utilized to quickly reference past work and provide needed information on maintenance work.

Total Points Generated	0
Score (100 - Total Points Generated)	100
Section Grade	**A**

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Operator Certification and Education

1. Operator-In-Charge

1.1 Did you have a designated operator-in-charge during the report year?

- ● Yes (0 points)
- ○ No (20 points)

Name: MICHAEL W JAEGER

Certification No: 29554

0

2. Certification Requirements

2.1 In accordance with Chapter NR 114.56 and 114.57, Wisconsin Administrative Code, what level and subclass(es) were required for the operator-in-charge (OIC) to operate the wastewater treatment plant and what level and subclass(es) were held by the operator-in-charge?

Sub Class	SubClass Description	WWTP	OIC		
		Advanced	OIT	Basic	Advanced
A1	Suspended Growth Processes				X
A2	Attached Growth Processes	X			X
A3	Recirculating Media Filters				
A4	Ponds, Lagoons and Natural				
A5	Anaerobic Treatment Of Liquid				
B	Solids Separation	X			X
C	Biological Solids/Sludges	X			X
P	Total Phosphorus	X			X
N	Total Nitrogen				
D	Disinfection	X			X
L	Laboratory	X			X
U	Unique Treatment Systems				
SS	Sanitary Sewage Collection	X	NA	NA	NA

2.2 Was the operator-in-charge certified at the appropriate level and subclass(es) to operate this plant? (Note: Certification in subclass SS, N and A5 not required in 2016; subclass SS is basic level only.)

- ● Yes (0 points)
- ○ No (20 points)

0

3. Succession Planning

3.1 In the event of the loss of your designated operator-in-charge, did you have a contingency plan to ensure the continued proper operation and maintenance of the plant that includes one or more of the following options (check all that apply)?

- ☒ One or more additional certified operators on staff
- ☐ An arrangement with another certified operator
- ☐ An arrangement with another community with a certified operator
- ☐ An operator on staff who has an operator-in-training certificate for your plant and is expected to be certified within one year
- ☐ A consultant to serve as your certified operator
- ☐ None of the above (20 points)

If "None of the above" is selected, please explain:

0

4. Continuing Education Credits

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4.1 If you had a designated operator-in-charge, was the operator-in-charge earning Continuing Education Credits at the following rates?

OIT and Basic Certification:

- o Averaging 6 or more CECs per year.
- o Averaging less than 6 CECs per year.

Advanced Certification:

- ● Averaging 8 or more CECs per year.
- o Averaging less than 8 CECs per year.

Total Points Generated	0
Score (100 - Total Points Generated)	100
Section Grade	**A**

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Financial Management

1. Provider of Financial Information

Name: Mike Jaeger

Telephone: (920)-686-3550 (XXX) XXX-XXXX

E-Mail Address (optional):

2. Treatment Works Operating Revenues

2.1 Are User Charges or other revenues sufficient to cover O&M expenses for your wastewater treatment plant AND/OR collection system ?

- ● Yes (0 points)
- ○ No (40 points)

If No, please explain:

2.2 When was the User Charge System or other revenue source(s) last reviewed and/or revised?

Year: 2016

- ● 0-2 years ago (0 points)
- ○ 3 or more years ago (20 points)
- ○ N/A (private facility)

2.3 Did you have a special account (e.g., CWFP required segregated Replacement Fund, etc.) or financial resources available for repairing or replacing equipment for your wastewater treatment plant and/or collection system?

- ● Yes (0 points)
- ○ No (40 points)

0

REPLACEMENT FUNDS [PUBLIC MUNICIPAL FACILITIES SHALL COMPLETE QUESTION 3]

3. Equipment Replacement Funds

3.1 When was the Equipment Replacement Fund last reviewed and/or revised?

Year: 2016

- ● 1-2 years ago (0 points)
- ○ 3 or more years ago (20 points)
- ○ N/A

If N/A, please explain:

3.2 Equipment Replacement Fund Activity

3.2.1 Ending Balance Reported on Last Year's CMAR		$ 9,772,636.00
3.2.2 Adjustments - if necessary (e.g. earned interest, audit correction, withdrawal of excess funds, increase making up previous shortfall, etc.)	+	$ 409,905.00
3.2.3 Adjusted January 1st Beginning Balance		$ 10,182,541.00
3.2.4 Additions to Fund (e.g. portion of User Fee, earned interest, etc.)	+	$ 0.00

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3.2.5 Subtractions from Fund (e.g., equipment replacement, major repairs - use description box 3.2.6.1 below*) - $ 0.00

3.2.6 Ending Balance as of December 31st for CMAR Reporting Year $ 10,182,541.00

All Sources: This ending balance should include all Equipment Replacement Funds whether held in a bank account(s), certificate(s) of deposit, etc.

3.2.6.1 Indicate adjustments, equipment purchases, and/or major repairs from 3.2.5 above.

There were no withdrawals or additional deposits in 2016. All capital projects and equipment were funded in the 2016 Sewer User Charges.

3.3 What amount should be in your Replacement Fund? $ 8,818,529.00

Please note: If you had a CWFP loan, this amount was originally based on the Financial Assistance Agreement (FAA) and should be regularly updated as needed. Further calculation instructions and an example can be found by clicking the SectionInstructions link under Info header in the left-side menu.

3.3.1 Is the December 31 Ending Balance in your Replacement Fund above, (#3.2.6) equal to, or greater than the amount that should be in it (#3.3)?

- ● Yes
- ○ No

If No, please explain.

0

4. Future Planning

4.1 During the next ten years, will you be involved in formal planning for upgrading, rehabilitating, or new construction of your treatment facility or collection system?

- ● Yes - If Yes, please provide major project information, if not already listed below.
- ○ No

Project #	Project Description	Estimated Cost	Approximate Construction Year
1	Lakeside Blvd liftstation upgrade- replace liftstation and relocate the existing forcemain	373536.7	2006
2	2006 Sewer relay projects Sewer relay - Holly Drive - E. Magnolia to East Cedar Ave. Sewer relay - E. Magnolia Ave - to Memorial Drive - to Holly Drive Project total 2194 ft.	413660	2006
3	North 40th and Archer liftstation/forcemain/discharge reroute - Complete replacement of existing liftstation, replacement and upsize of under river forcemain, reroute of sewage flow via forcemain and gravity line.	2304764.6	2009
4	2006 Relining of Sewers WU-06-7 Reline of sanitary sewers consisting of: 4735 LF of 8" sanitary sewer, 210 LF of 10" sanitary sewer, 1255 LF of 18" sanitary sewer, and 1262 LF of 20" sanitary sewer.	295897	2006
5	2007 Relining of Sewers WU-07-7 Reline of sanitary sewers consiting of 3551 LF of 8" sanitary sewer and 1706 LF of 10" sanitary sewer.	118135	2007
6	2007 Sewer Relay projects - South 18th Street from Grand Ave to Dewey Street, Rankin from N 18th Street to North 21st, and North 11th from Waldo Blvd to School Street	244754	2007
7	WWTF SCADA upgrade - replacement computers and update of control software. Custom programming and addition of historical trending.	25573	2007
8	Replacement WWTF Utility/Plow truck	24349	2007

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9	Chlorination system improvments - vacuum chlorine withdrawl manifold added and replacement gas leak detection equipment	6361	2007
10	Tertiary Filter Improvements - removal and disposal of existing media, remove and clean air scour laterals, repair and ancohor air scour piping, replace main air supply connections, install new filtration media	172250	2008
11	South 35th & Meadow Lane Reroute of the 40th and Archer liftstation discharge flow. Installation of 1649 feet of 16 inch PVC forcemain and 1876 feet of 18 inch PVC sewer pipe with manholes and steel casing for rail road crossing.	229283	2008
12	2008 Sanitary Sewer Relay Project - Madison St to South 10th Street, South 8th Street to Madison Street Abandon existing and install a total of 1830 feet of 6" sanitary building sewer, 173 feet of 8" sanitary sewer, 90 feet of 10" sanitary sewer, and 833 feet of 15" sanitary sewer pipe.	84131.52	2008
13	2008 New and Relay Sanitary Sewer Wisconsin Ave, Hecker Road, and South 6th and Jay street projects Abandon and replace various sewers, replace manholes and casting and covers	77914.68	2008
14	2008 Re-lining of Sanitary Sewers Reline of 3079 feet of 8" sanitary sewer, 1554 feet of 12" sanitary sewer, and 2126 feet of 15" sanitary sewer	222302.25	2008
15	Replacement of Wastewater Utility passenger vehicle	17267	2009
16	2009 Relining sanitary sewers - Furnish and install 1234 feet CIPP 8" sewer, 3144 feet CIPP 10" sewer, and 279 feet of CIPP 12" sewer	124303	2009
17	South 10th Street Sanitary Sewer Relay - Remove, Supply, Install, Relay of 2658 feet 8" sewer, 1063 feet 10" sewer, 293 feet of 15" sewer and 45 feet of 18" sewer.	395787.81	2009
18	2009 New & Relay Sanitary Sewers - Reed Avenue - E. Crescent Drive - MacAurther Drive - E. Linden Avenue - Arden Lane - S. 15th Street	285715.57	2009
19	Step Screens and Washer Compactors - removal of existing coarse bar screens(2) and replacement with Vulcan 1/8" fine step screens(2) each mated with Vulcan screenings washer/compactors	678715	2010
20	2010 Relining Sanitary Sewers - furnish and install CIPP for 4359 feet of 8" sanitary sewer and 2090 feet of 10" sanitary sewer	155456.5	2010
21	2010 Relay Sanitary Sewers - Macarther Drive, Iris Drive, E. Linden Avenue - Remove, replace, and restore 1556 feet of 8" sanitary sewer line	409346.4	2010
22	Sanitary sewer capacity study	128200	2010
23	2011 Relining of Sanitary Sewers - Furnish and install CIPP for 5028 feet of 8 inch lines, 921 feet of 10 inch sewer, 1398 feet of 15 inch sewer, and 622 feet of 20 inch sewer lines.	238180	2011
24	2012 Relining of Sanitary Sewers - Furnish and install CIPP for 2077 feet of 8 inch lines, 961 feet of 10 inch sewer, 696 feet of 12 inch sewer, 870 feet of 15 inch sewer. Includes mobilization, traffic control, and lateral reinstatment.	138527	2012
25	WWTF Operational Needs Review - Consultant to be hired to evaluate the existing facility and make recommendations for future capital projects based on current and aniticpated future NPDES permit requirements. The RFP's from prospective consultants are due 7/3/12	54500	2012
26	Hot water pipe replacement - WWTF Piping failed requiring replacement. Complete design, purchase, excavation, and replacement of supply and return underground hydronic piping from Building 800 to Building 100 and Building 930.	196777	2011
27	Remove leaking existing membrane roof and insulation and replace with new insulation and built up asphaltic roofing system on the mid level roof of building 500 - Stack Filter building.	57000	2013
28	2013 Relining of Sanitary Sewers - Furnish and install CIPP for 3324 feet of 8 inch lines, 101 feet of 10 inch lines, 1674 feet of 12 inch lines, 396 feet of 15 inch lines, and 722 feet of 21 inch sewer lines. Includes mobilization, traffic control, and lateral reinstatment.	242742	2013
29	2013 Sanitary Sewer Construction Furnish and relay 737 ft of 8" sewer, 53 ft of 10" sewer, 24 ft of 12" sewer and 31 ft of 15" sewer.	146365.87	2013
30	2014 Relining of Sanitary Sewers - Furnish and install CIPP for 9086 feet of 8 inch, 867 feet of 10 inch, 365 feet of 12 inch, to include mobilization, traffic control, and lateral reinstatement.	284057	2014

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31	Influent Screw Pump Improvements - Project removes existing aluminum covers to expose corroded pump deflector plates. New stainless steel deflector plates to be installed with stainless steel anchors in off set hole pattern. Concrete pour joints and areas of degradation to be cleaned and repaired. Aluminum covers to be reinstalled at completion.	101675	2015
32	Horseshoe Drive Pump Station Rehabilitation - Provision and construction of replacement submersible pump station and emergency generator, new electrical service, and SCADA modifications and integration. Update: Budgeted for in 2015 but constructed in 5/2016.	309000	2016
33	2015 Re-lining of Sanitary Sewers Project includes mobilization and traffic control. Furnish and reline with CIPP of 11,073 feet of 8 inch sewers lines. Furnish and install CIPP of 774 feet of 15 inch sewer lines plus all lateral reinstatement.	257505	2015
34	2015 Sanitary Sewer construction - Various tasks to include removal and rebury of 98 feet of 8" sewer and 62 feet of 12" sewer lines. Provision of manholes, reconnection of 7 laterals, with restoration of site with specified base materials, concrete pavement, and televised completed repairs.	143849	2015
35	2016 Re-lining of Sanitary Sewers - Project 4214135 Project includes mobilization and traffic control. Furnish and reline with CIPP of 7211 feet of 8 inch sewers lines. Furnish and install 3667 feet of 10 inch sewer lines. Furnish and install 1051 feet of 12 inch sewer lines. Furnish and install install 466 feet of 20 inch sewer lines plus all lateral reinstatement.	304093	2016
36	Start of WWTF Upgrade to include removal of 1950's rectangular clarifiers and replace with new circular clarifier. New Heat Exchanger, new Boiler, new HVAC equipment and associated pumps and piping, new Final Effluent pump, also new MCC panels, transformers, breakers and wiring as part of electrical upgrade.	8,900,000	2017
37	Repair of Rock Filter Pump - 130hp 3phase submersible pump to lift wastewater into the Rock Filters for treatment.	34,057	2017

5. Financial Management General Comments

ENERGY EFFICIENCY AND USE

6. Collection System

6.1 Energy Usage

6.1.1 Enter the monthly energy usage from the different energy sources:

COLLECTION SYSTEM PUMPAGE: Total Power Consumed

Number of Municipally Owned Pump/Lift Stations: 14

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	Electricity Consumed (kWh)	Natural Gas Consumed (therms)
January	422,179	1,186
February	394,489	1,050
March	436,735	973
April	423,931	987
May	402,448	474
June	383,022	86
July	401,736	1
August	404,658	
September	384,067	
October	393,417	
November	386,695	142
December	407,488	998
Total	**4,840,865**	**5,897**
Average	**403,405**	**655**

6.1.2 Comments:

6.2 Energy Related Processes and Equipment

6.2.1 Indicate equipment and practices utilized at your pump/lift stations (Check all that apply):

- ☒ Comminution or Screening
- ☐ Extended Shaft Pumps
- ☒ Flow Metering and Recording
- ☐ Pneumatic Pumping
- ☒ SCADA System
- ☒ Self-Priming Pumps
- ☒ Submersible Pumps
- ☐ Variable Speed Drives
- ☐ Other:

6.2.2 Comments:

6.3 Has an Energy Study been performed for your pump/lift stations?

- ● No
- ○ Yes

Year:

By Whom:

Describe and Comment:

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6.4 Future Energy Related Equipment

6.4.1 What energy efficient equipment or practices do you have planned for the future for your pump/lift stations?

We currently do not have any energy conservation plans for upgrades to old stations. We comply with the current requirements on new stations that will be built per engineering firm that designs the lift station.

7. Treatment Facility

7.1 Energy Usage

7.1.1 Enter the monthly energy usage from the different energy sources:

TREATMENT PLANT: Total Power Consumed/Month

	Electricity Consumed (kWh)	Total Influent Flow (MG)	Electricity Consumed/ Flow (kWh/MG)	Total Influent BOD (1000 lbs)	Electricity Consumed/ Total Influent BOD (kWh/1000lbs)	Natural Gas Consumed (therms)
January	363,377	228.65	1,589	548.24	663	28,639
February	337,485	205.66	1,641	547.69	616	23,464
March	375,767	303.03	1,240	556.67	675	18,011
April	357,596	278.11	1,286	578.10	619	
May	348,926	215.66	1,618	579.76	602	
June	342,020	213.62	1,601	515.07	664	
July	361,583	223.66	1,617	616.22	587	1,985
August	364,421	212.78	1,713	651.74	559	
September	350,411	217.85	1,608	667.05	525	1,699
October	354,657	210.50	1,685	970.24	366	3,088
November	342,115	180.41	1,896	720.27	475	7,178
December	361,533	194.61	1,858	524.06	690	21,296
Total	**4,259,891**	**2,684.54**		**7,475.11**		**105,360**
Average	**354,991**	**223.71**	**1,613**	**622.93**	**587**	**13,170**

7.1.2 Comments:

7.2 Energy Related Processes and Equipment

7.2.1 Indicate equipment and practices utilized at your treatment facility (Check all that apply):

- ☐ Aerobic Digestion
- ☒ Anaerobic Digestion
- ☐ Biological Phosphorus Removal
- ☒ Coarse Bubble Diffusers
- ☐ Dissolved O2 Monitoring and Aeration Control
- ☒ Effluent Pumping
- ☐ Fine Bubble Diffusers
- ☐ Mechanical Sludge Processing
- ☐ Nitrification
- ☒ SCADA System
- ☐ UV Disinfection
- ☒ Variable Speed Drives

☐ Other:

7.2.2 Comments:

7.3 Future Energy Related Equipment

7.3.1 What energy efficient equipment or practices do you have planned for the future for your treatment facility?

2017-2018 Upgrade will utilize more efficient Final Effluent Pump (Focus on Energy grant) - updated MCC Electrical panels - transformers, breakers,etc..
A new circular clarifier with one motor gear drive will be installed replaced 3 rectangular chain and flight clarifiers that each had its own geardrive/motor
A new energy efficient boiler will be installed that can utilize methane gas generated from the anearobic digestion process at the WWTF.
Also, new HVAC units and more efficient inline pumps will be installed

8. Biogas Generation

8.1 Do you generate/produce biogas at your facility?

○ No
● Yes

If Yes, how is the biogas used (Check all that apply):

☒ Flared Off
☒ Building Heat
☒ Process Heat
☐ Generate Electricity
☐ Other:

9. Energy Efficiency Study

9.1 Has an Energy Study been performed for your treatment facility?

● No
○ Yes

☐ Entire facility

Year:

By Whom:

Describe and Comment:

☐ Part of the facility

Year:

By Whom:

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Describe and Comment:

Total Points Generated	0
Score (100 - Total Points Generated)	100
Section Grade	**A**

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Sanitary Sewer Collection Systems

1. Capacity, Management, Operation, and Maintenance (CMOM) Program

1.1 Do you have a CMOM program that is being implemented?

- ● Yes
- ○ No

If No, explain:

1.2 Do you have a CMOM program that contains all the applicable components and items according to Wisc. Adm Code NR 210.23 (4)?

- ● Yes
- ○ No (30 points)
- ○ N/A

If No or N/A, explain:

1.3 Does your CMOM program contain the following components and items? (check the components and items that apply)

☒ Goals [NR 210.23 (4)(a)]

Describe the major goals you had for your collection system last year:

1. Maintain existing programs, including funding
2. Establish a Fats, Oils, and Grease control program
3. Use actual production figures to track Operation and Maintenance activity

Did you accomplish them?

- ○ Yes
- ● No

If No, explain:

Not all goals were completed.
We do maintain existing programs including the funding to accomplish.
Operation and Maintenance activity is tracked by logs.
We did not get to discuss the implementation of a Fats, Oil and Grease program.

☒ Organization [NR 210.23 (4) (b)]

Does this chapter of your CMOM include:

- ☒ Organizational structure and positions (eg. organizational chart and position descriptions)
- ☒ Internal and external lines of communication responsibilities
- ☒ Person(s) responsible for reporting overflow events to the department and the public

☒ Legal Authority [NR 210.23 (4) (c)]

What is the legally binding document that regulates the use of your sewer system?

Sewer Use Ordinance

If you have a Sewer Use Ordinance or other similar document, when was it last reviewed and revised? (MM/DD/YYYY) 2017-01-26

Does your sewer use ordinance or other legally binding document address the following:

- ☒ Private property inflow and infiltration
- ☒ New sewer and building sewer design, construction, installation, testing and inspection
- ☒ Rehabilitated sewer and lift station installation, testing and inspection
- ☐ Sewage flows satellite system and large private users are monitored and controlled, as necessary
- ☐ Fat, oil and grease control
- ☒ Enforcement procedures for sewer use non-compliance

☒ Operation and Maintenance [NR 210.23 (4) (d)]

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Does your operation and maintenance program and equipment include the following:

- ☒ Equipment and replacement part inventories
- ☒ Up-to-date sewer system map
- ☒ A management system (computer database and/or file system) for collection system information for O&M activities, investigation and rehabilitation
- ☒ A description of routine operation and maintenance activities (see question 2 below)
- ☒ Capacity assessment program
- ☒ Basement back assessment and correction
- ☒ Regular O&M training

☒ Design and Performance Provisions [NR 210.23 (4) (e)]

What standards and procedures are established for the design, construction, and inspection of the sewer collection system, including building sewers and interceptor sewers on private property?

- ☒ State Plumbing Code, DNR NR 110 Standards and/or local Municipal Code Requirements
- ☒ Construction, Inspection, and Testing
- ☒ Others:

Wisconsin Sewer and Water Standard Specifications

0

☒ Overflow Emergency Response Plan [NR 210.23 (4) (f)]

Does your emergency response capability include:

- ☒ Responsible personnel communication procedures
- ☒ Response order, timing and clean-up
- ☒ Public notification protocols
- ☒ Training
- ☒ Emergency operation protocols and implementation procedures

☒ Annual Self-Auditing of your CMOM Program [NR 210.23 (5)]

☐ Special Studies Last Year (check only those that apply):

- ☐ Infiltration/Inflow (I/I) Analysis
- ☐ Sewer System Evaluation Survey (SSES)
- ☐ Sewer Evaluation and Capacity Managment Plan (SECAP)
- ☐ Lift Station Evaluation Report
- ☐ Others:

2. Operation and Maintenance

2.1 Did your sanitary sewer collection system maintenance program include the following maintenance activities? Complete all that apply and indicate the amount maintained.

Cleaning	65	% of system/year
Root removal	5	% of system/year
Flow monitoring	0	% of system/year
Smoke testing	0	% of system/year
Sewer line televising	6.2	% of system/year
Manhole inspections	50	% of system/year
Lift station O&M	14	# per L.S./year
Manhole rehabilitation	0	% of manholes rehabbed
Mainline rehabilitation	1.2	% of sewer lines rehabbed

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Private sewer inspections	0	% of system/year
Private sewer I/I removal	0	% of private services
River or water crossings	0	% of pipe crossings evaluated or maintained

Please include additional comments about your sanitary sewer collection system below:

The 65% figure reported above for cleaning applies to sewer lines 15 inches or less in diameter

3. Performance Indicators

3.1 Provide the following collection system and flow information for the past year.

33.49	Total actual amount of precipitation last year in inches
30.5	Annual average precipitation (for your location)
189.66	Miles of sanitary sewer
14	Number of lift stations
0	Number of lift station failures
14	Number of sewer pipe failures
14	Number of basement backup occurrences
39	Number of complaints
7.35	Average daily flow in MGD (if available)
10.2	Peak monthly flow in MGD (if available)
	Peak hourly flow in MGD (if available)

3.2 Performance ratios for the past year:

0.00	Lift station failures (failures/year)
0.07	Sewer pipe failures (pipe failures/sewer mile/yr)
0.00	Sanitary sewer overflows (number/sewer mile/yr)
0.07	Basement backups (number/sewer mile)
0.21	Complaints (number/sewer mile)
1.4	Peaking factor ratio (Peak Monthly:Annual Daily Avg)
0.0	Peaking factor ratio (Peak Hourly:Annual Daily Avg)

4. Overflows

LIST OF SANITARY SEWER (SSO) AND TREATMENT FACILITY (TFO) OFERFLOWS REPORTED **

Date	Location	Cause	Estimated Volume (MG)
None reported			

** If there were any SSOs or TFOs that are not listed above, please contact the DNR and stop work on this section until corrected.

5. Infiltration / Inflow (I/I)

5.1 Was infiltration/inflow (I/I) significant in your community last year?

- ○ Yes
- ● No

If Yes, please describe:

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5.2 Has infiltration/inflow and resultant high flows affected performance or created problems in your collection system, lift stations, or treatment plant at any time in the past year?

- ○ Yes
- ● No

If Yes, please describe:

5.3 Explain any infiltration/inflow (I/I) changes this year from previous years:

No changes in 2016. Cleaning, televising, and slip lining contracts were all bid out and work completed as in previous years.

5.4 What is being done to address infiltration/inflow in your collection system?

Manitowoc developed and implemented a CMOM program in 2016. The CMOM will be reviewed at the end of the year to modify and plan for the upcoming year. Sources of infiltration and inflow are always trying to be identified.

Total Points Generated	0
Score (100 - Total Points Generated)	100
Section Grade	**A**

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Grading Summary

WPDES No: 0024601

SECTIONS	LETTER GRADE	GRADE POINTS	WEIGHTING FACTORS	SECTION POINTS
Influent	A	4	3	12
BOD/CBOD	A	4	10	40
TSS	A	4	5	20
Biosolids	C	2	5	10
Staffing/PM	A	4	1	4
OpCert	A	4	1	4
Financial	A	4	1	4
Collection	A	4	3	12
TOTALS			**29**	**106**
GRADE POINT AVERAGE (GPA) = 3.66				

Notes:

A = Voluntary Range (Response Optional)
B = Voluntary Range (Response Optional)
C = Recommendation Range (Response Required)
D = Action Range (Response Required)
F = Action Range (Response Required)

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Resolution or Owner's Statement

Name of Governing Body or Owner: City of Manitowoc Common Council

Date of Resolution or Action Taken: 2017-08-21

Resolution Number:

Date of Submittal:

ACTIONS SET FORTH BY THE GOVERNING BODY OR OWNER RELATING TO SPECIFIC CMAR SECTIONS (Optional for grade A or B. Required for grade C, D, or F):

Influent Flow and Loadings: Grade = A

Effluent Quality: BOD: Grade = A

Effluent Quality: TSS: Grade = A

Biosolids Quality and Management: Grade = C

Zinc barely exceeded the High Quality Limit in September and November of 2016. This was not cumulatively tracked at the time due to fall land application timeframe and emptying lagoons for winter storage. A spreadsheet will be developed and future follow ups on cumulative tracking of metals to each land application site will occur shall a high quality exceedence happen.

Staffing: Grade = A

Operator Certification: Grade = A

Financial Management: Grade = A

Collection Systems: Grade = A
(Regardless of grade, response required for Collection Systems if SSOs were reported)

ACTIONS SET FORTH BY THE GOVERNING BODY OR OWNER RELATING TO THE OVERALL GRADE POINT AVERAGE AND ANY GENERAL COMMENTS
(Optional for G.P.A. greater than or equal to 3.00, required for G.P.A. less than 3.00)
G.P.A. = 3.66