



# Town of Friday Harbor Water, Wastewater, and Solid Waste Utilities Summary Reports

[www.fridayharbor.org](http://www.fridayharbor.org)

**Period ending: May 2019**

Data provided by  
Wayne Haefele, PE, Public Works Director  
Water Utility, Mike Deegan, Water System Mgr.  
Frank Byrne, Water Treatment Plant Operator  
Wastewater Utility, Don Reitan, Leadman  
Solid Waste Utility, Dave Smith, Leadman

Analysis & Reports prepared by  
Mike Greene, System Administrator

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**Water - use MTD**sourceDate  
5 / 2019

Spe=Special, Sfr=Single Family Residential, P.A= Public Authority, Mfr=Multi-family, Ind=Industrial, Com=Commerc

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<b>Water Class</b>	<b>Accounts</b>	<b>Gallons</b>
Spe	4	53,173
Sfr	985	2,988,690
PA	75	1,072,220
Mfr	123	1,714,050
Ind	15	106,370
Com	221	1,870,990
<b>TOTAL</b>	<b>1,423</b>	<b>7,805,493</b>

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**Water use MTD - accounts with sewer**sourceDate  
5 / 2019

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<b>Sewer Class</b>	<b>Accounts</b>	<b>Gallons</b>
<b>Location: IN</b>		
Mfr In/low Strength	59	604,200
Com In/lo Strength	160	972,370
Dot In/lo Strength	3	43,510
Ind In/hi Strength	1	45,460
Ind In/lo Strength	10	54,410
Lmf In/lo Strength	1	2,760
Com In/hi Strength	45	749,310
Mfr In/lo Strength	54	536,090
Mhp In/lo Strength	2	386,100
PA In/hi Strength	3	81,590
PA In/lo Strength	42	474,100
Sfr IN Town	613	1,926,230
Low Rate / IN Town	6	10,900
	<b>999</b>	<b>5,887,030</b>
<b>Location: Out</b>		
UW Out/hi Strength	1	314,900
Mfr Out/lo Strength	1	3,810
Sfr Out of Town	4	8,250
	<b>6</b>	<b>326,960</b>
<b>TOTAL</b>	<b>1005</b>	<b>6,213,990</b>

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**Water - use MTD by Location**sourceDate  
5 / 2019

Spe=Special, Sfr=Single Family Residential, P.A= Public Authority, Mfr=Multi-family, Ind=Industrial, Com=Commerc

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<b>Water Class</b>	<b>Accounts</b>	<b>Gallons</b>
<b>Location: IN</b>		
Spe	3	47,563
Sfr	633	1,951,860
PA	68	731,300
Mfr	118	1,582,530
Ind	13	105,700
Com	217	1,784,290
	<hr/>	
	1,052	6,203,243
<b>Location: Out</b>		
Spe	1	5,610
Sfr	352	1,036,830
PA	7	340,920
Mfr	5	131,520
Ind	2	670
Com	4	86,700
	<hr/>	
	371	1,602,250
<b>TOTAL</b>	<b>1,423</b>	<b>7,805,493</b>

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**Refuse - pickups by Class**sourceDate  
5 / 2019

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<b>Location</b>	<b>Class</b>	<b>Pickups</b>
IN	Sfr	1,486.0
	RefuseOnly	292.5
	PA	205.5
	Mfr	412.0
	Ind	19.0
	Com	2,178.0
		<hr/> 4,593.0
Out	Sfr	0.0
	Mfr	6.0
		<hr/> 6.0
	<b>TOTAL</b>	<b>4,599.0</b>

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**Refuse - active accounts**sourceDate  
5 / 2019

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Location	Refuse Type	Accounts
IN		
	Small Dumpster	47
	PA	39
	Medium Dumpste	53
	Large Dumpster	64
	Compactors	3
	Cans Low Rate	6
	Cans	823
		<hr/>
		1,035
Out		
	Large Dumpster	1
	Cans	1
		<hr/>
		2
		<hr/>
	<b>TOTAL</b>	<b>1,037</b>

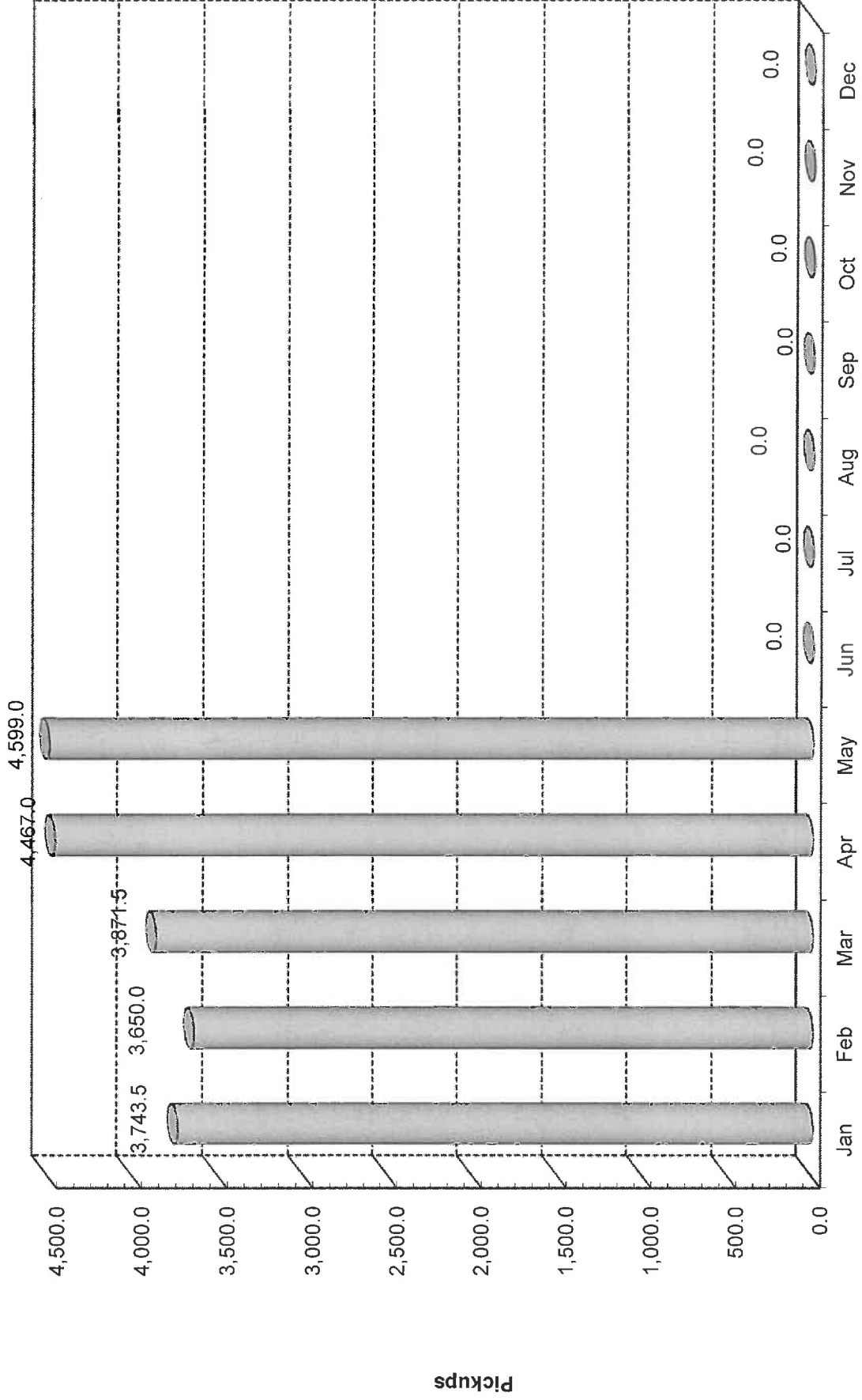
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**Recycle - pickups by Class**sourceDate  
5 / 2019

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Location	Class	Pickups
IN	Sfr	593
	RefuseOnly	16
	PA	0
	Mfr	74
	Ind	2
	Com	9
		<hr/> 694
Out	Sfr	0
	Mfr	0
		<hr/> 0
<b>TOTAL</b>		<b>694</b>

# Refuse Pickups by Month - 2019





## Refuse Pickups - 2019 YTD

Account Type	SFR	Refuse Only	P.A	MFR	IND	COM	Other	Total
Jan	1,327.5	196.5	148.5	353.5	18.0	1,699.5		3,743.5
Feb	1,387.0	182.5	152.0	367.0	21.5	1,535.5	4.5	3,650.0
Mar	1,324.0	221.0	170.0	367.0	18.0	1,767.5	4.0	3,871.5
Apr	1,617.0	271.0	180.5	426.5	21.0	1,947.0	4.0	4,467.0
May	1,486.0	292.5	205.5	412.0	19.0	2,178.0	6.0	4,599.0
Jun								0.0
Jul								0.0
Aug								0.0
Sep								0.0
Oct								0.0
Nov								0.0
Dec								0.0
YTD	7,141.5	1,163.5	856.5	1,926.0	97.5	9,127.5	18.5	20,331.0

Finish Water Flow to Town  
source: Water Treatment Facility Monthly Report

Revised reporting period: per K. Anderson 03/06/17  
to reflect meter reading dates (?).  
Start/End dates may change monthly.

30 :count of days in reporting period.

April 15, 2019		May 14, 2019	
day	flow (total flow)	day	flow (total flow)
15	233	1	258
16	303	2	301
17	238	3	359
18	346	4	378
19	241	5	378
20	288	6	384
21	293	7	331
22	248	8	360
23	328	9	330
24	263	10	387
25	275	11	402
26	341	12	348
27	307	13	318
28	277	14	369
29	330	15	
30	308	16	
31			
<hr/>		<hr/>	
days	4619	days	4903
16		14	
TOTAL DAYS		<hr/> <hr/> 30	
TOTAL FLOW		<hr/> <hr/> 9522	
		1,000's gallons	

TOWN OF FRIDAY HARBOR

Net Water Production - 2019

amounts in gallons

	Jan	Feb	Mar	Apr	May	Jun
Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report	6,982,000	7,865,000	7,468,000	8,604,000	9,522,000	0
3% meter loss	164,951	197,550	159,994	208,847	234,165	0
Flushing	308,800	309,700	341,200	245,100	183,500	0
SJC#3 FD use	5,000	5,000	5,000	5,000	5,000	0
Leaks	216,000	316,000	226,000	432,000	432,000	0
notes						
other non-metered use						
notes						
Additional water in storage						
notes						
Total other uses	-694,751	-828,250	-732,194	-890,947	-854,665	0
<b>Net production</b>	<b>6,287,249</b>	<b>7,036,750</b>	<b>6,735,806</b>	<b>7,713,053</b>	<b>8,667,335</b>	<b>0</b>
	Jul	Aug	Sep	Oct	Nov	Dec
Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report	0	0	0	0	0	0
3% meter loss						
Flushing						
SJC#3 FD use						
Leaks						
notes						
other non-metered use						
notes						
notes						
Total other uses	0	0	0	0	0	0
<b>Net production</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

TOWN OF FRIDAY HARBOR

# Water Consumption & Production

Revised meter loss reporting begin 07/09 (per Robert Krebs, Evergreen Rural Water Assoc.)

Period	USE (consumption)	Cumulative Use YTD	Flow (production)	Unaccounted over / (under)	Cumulative Flow YTD	Average Daily Flow	
<b>2017</b>							
<i>gallons</i>	Jan-17	8,403,985	8,484,000	-80,015		273,677	
	Feb-17	6,321,628	14,725,613	-770,372	15,576,000	253,286	
	Mar-17	6,110,787	20,836,401	-688,213	22,375,000	219,323	
	Apr-17	8,344,725	29,181,126	-1,394,275	32,114,000	324,633	
	May-17	7,085,245	36,266,371	672,245	38,527,000	206,871	
	Jun-17	10,048,456	46,314,827	-256,544	48,832,000	343,500	
	Jul-17	14,681,313	60,996,140	-353,687	63,867,000	485,000	YTD
	Aug-17	13,661,250	74,657,390	-1,147,750	78,676,000	477,710	Unaccounted
	Sep-17	14,093,015	88,750,405	-874,985	93,644,000	498,933	as % of Flow
Average	Oct-17	7,823,149	96,573,554	-216,851	101,684,000	259,355	5.10%
Monthly Use	Nov-17	6,680,806	103,254,360	-592,194	108,957,000	242,433	
9,176,124	Dec-17	6,859,133	110,113,492	-211,867	116,028,000	228,097	-5,914,508
<b>YEAR TOTAL:</b>	12	110,628,322	Cumulative Metered/Other Use YTD	116,028,000	-5,914,508	Cumulative Unaccounted 3% meter loss	317,735 2,915,731
<b>2018</b>							
<i>gallons</i>	Jan-18	6,473,834	7,347,000	-873,166		237,000	
	Feb-18	6,318,823	12,792,658	-735,177	14,401,000	251,929	
	Mar-18	5,860,732	18,653,389	-705,268	20,967,000	211,806	
	Apr-18	7,416,815	26,070,204	-839,185	29,223,000	275,200	
	May-18	7,687,108	33,757,312	-244,892	37,155,000	255,871	
	Jun-18	11,419,190	45,176,502	-519,810	49,094,000	397,967	
	Jul-18	13,151,864	58,328,366	-1,029,136	63,275,000	457,452	YTD
	Aug-18	14,508,241	72,836,607	-855,759	78,639,000	495,613	Unaccounted
	Sep-18	12,454,526	85,291,133	-1,314,474	92,408,000	458,967	as % of Flow
Average	Oct-18	8,624,468	93,915,601	-551,532	101,584,000	296,000	8.25%
Monthly Use	Nov-18	7,401,706	101,317,307	-920,294	109,906,000	277,400	
9,031,729	Dec-18	7,063,439	108,380,746	-1,161,561	118,131,000	265,323	-9,750,254
<b>YEAR TOTAL:</b>	12	108,380,746	Cumulative Metered/Other Use YTD	118,131,000	-9,750,254	Cumulative Unaccounted 3% meter loss	323,377 2,989,222
<b>2019</b>							
<i>gallons</i>	Jan-19	6,193,133	6,982,000	-788,867		225,226	
	Feb-19	7,413,239	13,606,372	-451,761	14,847,000	280,893	
	Mar-19	6,065,311	19,671,683	-1,402,689	22,315,000	240,903	
	Apr-19	7,852,517	27,524,200	-751,483	30,919,000	286,800	
	May-19	8,660,158	36,184,358	-861,842	40,441,000	307,161	
	Jun-19	0	36,184,358	0	40,441,000	0	
	Jul-19	0	36,184,358	0	40,441,000	0	YTD
	Aug-19	0	36,184,358	0	40,441,000	0	Unaccounted
	Sep-19	0	36,184,358	0	40,441,000	0	as % of Flow
Average	Oct-19	0	36,184,358	0	40,441,000	0	10.53%
Monthly Use	Nov-19	0	36,184,358	0	40,441,000	0	
7,236,872	Dec-19	0	36,184,358	0	40,441,000	0	-4,256,642
<b>YEAR TOTAL:</b>	5	36,184,358	Cumulative Metered/Other Use YTD	40,441,000	-4,256,642	Cumulative Unaccounted 3% meter loss	268,197 965,507

<b>3 YEAR</b>	Use	Flow	Daily Flow	3 Year Loss
<b>AVERAGES:</b>	5,062,506 :gal/month	9,468,966 :gal/month	197,191	as % of Flow <b>7.25%</b>

source: Monthly Water Treatment Plant Report & utility.mdb's      3 yr cumulative flow 274,600,000  
3 yr unaccounted -19,921,404

TOWN OF FRIDAY HARBOR

**Trout Lake Reservoir Level**

*Months with positive levels may reflect that a removable 7.25 inch riser has been added to the top of the original spillway.*

<i>end of</i>	<i>Inches above/(below) original spillway</i>	<i>end of</i>	<i>Inches above/(below) original spillway</i>	<i>end of</i>	<i>Inches above/(below) original spillway</i>
Jan-12	-1.75	Jan-15	0.00	Jan-18	0.00
Feb-12	0.00	Feb-15	0.00	Feb-18	0.00
Mar-12	0.00	Mar-15	0.00	Mar-18	8.75
Apr-12	8.00	Apr-15	6.50	Apr-18	8.25
May-12	0.00	May-15	0.00	May-18	1.50
Jun-12	7.00	Jun-15	-13.00	Jun-18	-10.50
Jul-12	-19.00	Jul-15	-29.50	Jul-18	-29.50
Aug-12	-32.75	Aug-15	-42.25	Aug-18	-42.00
Sep-12	-45.00	Sep-15	-49.50	Sep-18	-50.00
Oct-12	-48.00	Oct-15	-54.50	Oct-18	-54.50
Nov-12	-24.25	Nov-15	-17.25	Nov-18	-55.50
Dec-12	0.00	Dec-15	0.00	Dec-18	-26.00
Jan-13	0.00	Jan-16	0.00	Jan-19	0.00
Feb-13	0.00	Feb-16	0.00	Feb-19	0.00
Mar-13	0.00	Mar-16	0.00	Mar-19	2.75
Apr-13	8.50	Apr-16	6.00	Apr-19	2.75
May-13	3.75	May-16	-2.50	May-19	-0.75
Jun-13	-3.75	Jun-16	-11.00	Jun-19	
Jul-13	-21.00	Jul-16	-21.00	Jul-19	
Aug-13	-34.25	Aug-16	-36.50	Aug-19	
Sep-13	-39.25	Sep-16	-49.50	Sep-19	
Oct-13	-43.50	Oct-16	-51.00	Oct-19	
Nov-13	-44.75	Nov-16	-45.50	Nov-19	
Dec-13	-26.00	Dec-16	-10.35	Dec-19	
Jan-14	0.00	Jan-17	0.00	Jan-20	
Feb-14	0.00	Feb-17	0.00	Feb-20	
Mar-14	0.00	Mar-17	2.75	Mar-20	
Apr-14	8.25	Apr-17	9.00	Apr-20	
May-14	5.00	May-17	4.75	May-20	
Jun-14	7.00	Jun-17	-4.00	Jun-20	
Jul-14	-20.50	Jul-17	-19.00	Jul-20	
Aug-14	-30.25	Aug-17	-32.00	Aug-20	
Sep-14	-42.75	Sep-17	-43.00	Sep-20	
Oct-14	-45.25	Oct-17	-50.50	Oct-20	
Nov-14	-46.50	Nov-17	-48.00	Nov-20	
Dec-14	0.00	Dec-17	-11.50	Dec-20	

# Rainfall - Trout Lake Water Treatment Facility

source: Water Treatment Plant Weather Reports

*all figures in inches*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	average (2005-14)
JAN	5.49	6.87	6.51	2.34	3.82	4.73	5.90	3.46	4.14	2.86	4.61
FEB	1.01	1.61	2.83	1.78	1.50	1.24	2.74	3.38	1.32	4.22	2.16
MAR	2.33	0.91	3.70	1.99	2.05	3.30	3.37	3.09	3.63	3.88	2.83
APR	1.37	2.23	1.49	1.32	2.07	1.47	2.96	1.91	2.70	1.94	1.95
MAY	1.08	1.24	0.78	1.26	1.69	2.09	3.07	1.09	2.20	1.05	1.56
JUN	1.63	0.56	1.03	1.16	0.35	1.10	0.68	2.60	0.83	0.52	1.05
JUL	0.70	0.26	1.56	0.21	0.45	0.11	0.84	1.04	0.00	0.36	0.55
AUG	1.60	0.03	0.64	1.88	0.81	0.72	0.29	0.00	0.95	0.49	0.74
SEP	0.94	1.15	0.54	0.84	1.58	4.35	0.72	0.12	5.08	1.34	1.67
OCT	3.50	1.89	2.12	1.83	5.24	1.38	2.29	6.40	1.42	4.00	3.01
NOV	4.28	10.43	2.32	5.15	6.76	2.94	4.50	3.32	2.49	4.00	4.62
DEC	2.89	3.74	4.59	3.70	1.80	6.55	1.88	4.79	2.28	3.37	3.56
<b>Total</b>	<b>26.82</b>	<b>30.92</b>	<b>28.11</b>	<b>23.46</b>	<b>28.12</b>	<b>29.98</b>	<b>29.24</b>	<b>31.20</b>	<b>27.04</b>	<b>28.03</b>	<b>28.29</b>

Cumulative thru

<b>DEC</b>	<b>26.82</b>	<b>30.92</b>	<b>28.11</b>	<b>23.46</b>	<b>28.12</b>	<b>29.98</b>	<b>29.24</b>	<b>31.20</b>	<b>27.04</b>	<b>28.03</b>
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*all figures in inches*

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
JAN	3.97	2.17	1.60	5.10	3.87					
FEB	2.95	4.83	2.99	3.80	1.76					
MAR	3.62	2.88	3.27	1.48	0.87					
APR	0.51	0.75	2.20	3.10	1.61					
MAY	0.30	0.48	1.61	0.07	1.29					
JUN	0.14	1.22	0.75	0.72						
JUL	0.36	0.32	0.15	0.18						
AUG	0.94	0.11	0.11	0.01						
SEP	1.28	1.40	0.71	1.27						
OCT	3.53	4.80	4.28	2.23						
NOV	6.19	3.47	4.32	4.32						
DEC	5.26	4.02	3.83	4.26						
<b>Total</b>	<b>29.05</b>	<b>26.45</b>	<b>25.82</b>	<b>26.54</b>	<b>9.40</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Cumulative thru

<b>DEC</b>	<b>29.05</b>	<b>26.45</b>	<b>25.82</b>	<b>26.54</b>	<b>9.40</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
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# Prevention of Wastewater Facility Overloading

Period start: May-18  
 Period end: Apr-19

INFLUENT BOD LOADING (pounds per day)	AVG. EFFLUENT FLOW (millions of gallons per day)	SUSPENDED SOLIDS LOADING (pounds per day)
Design Criteria (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.A) max.month 1,600	Design Criteria (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.A) max.month 0.69000	Design Criteria (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.A) max.month 1,110
85% Capacity Planning Threshold (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.B.1) 1,360	85% Capacity Planning Threshold (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.B.1) 0.58650	85% Capacity Planning Threshold (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.B.1) 944
Month with highest average loading in period Jan-19	Month with highest average flow in period Jan-19	Month with highest average loading in period Jan-19
Highest average monthly loading in period (pounds per day) 559	Highest average monthly flow in period (millions of gallons per day) 0.4088414	Highest average monthly loading in period (pounds per day) 488
% of Design Criteria <b>35%</b>	% of Design Criteria <b>59%</b>	% of Design Criteria <b>44%</b>
exceeds Design Criteria? <b>No</b>	exceeds Design Criteria? <b>No</b>	exceeds Design Criteria? <b>No</b>
Previous month's loading 509	Previous month's flow 0.2541	Previous month's loading 319
Following month's loading 524	Following month's flow 0.2799	Following month's loading 245
exceeds Planning Threshold for 3 consecutive months? <b>No</b>	exceeds Planning Threshold for 3 consecutive months? <b>No</b>	exceeds Planning Threshold for 3 consecutive months? <b>No</b>