

## FLOW AND STRENGTH PROJECTIONS

MONTH: May 2021

	<u>PROJECTED</u>	<u>ACTUAL</u>	<u>DIFFERENCE</u>	<u>PROJECTED INCOME FOR MONTH</u>	<u>ACTUAL INCOME FOR MONTH</u>	<u>SURPLUS OR DEFICIT</u>
FLOW (GALLONS)	266,217,189	197,466,000	-68,751,189	\$ 167,184.39	\$ 124,008.65	\$ (43,175.75)
B.O.D. (#s)	418,006	490,217	72,211	\$ 79,003.13	\$ 92,651.01	\$ 13,647.88
S. SOLIDS (#s)	401,837	388,355	-13,482	\$ 95,637.21	\$ 92,428.49	\$ (3,208.72)
PHOSPHORUS (#s)	7,412	7,983	571	\$ 46,347.24	\$ 49,917.70	\$ 3,570.46
AMMONIA-N (#s)	48,864	57,497	8,633	\$ 60,395.90	\$ 71,066.29	\$ 10,670.39
CHLORIDES (#s)	951,964	1,026,059	74,095	\$ 2,855.89	\$ 3,078.18	\$ 222.29
			<b>TOTAL:</b>	\$ 451,423.77	\$ 433,150.32	\$ (18,273.45)

(THRU MAY 2021)

### PROJECTED FOR 2021

	<u>END OF YEAR PROJECTED</u>	<u>YEAR TO DATE SURPLUS/ DEFICIT</u>	<u>YEAR TO DATE SURPLUS/ DEFICIT \$\$</u>
FLOW (GALLONS)	2,053,099,003	-162,504,803	\$ (102,053.02)
B.O.D. (#s)	3,755,281	226,692	\$ 42,844.80
S. SOLIDS (#s)	3,909,560	44,335	\$ 10,551.71
PHOSPHORUS (#s)	80,410	1,123	\$ 7,019.06
AMMONIA-N (#s)	505,265	19,627	\$ 24,258.81
CHLORIDES (#s)	8,748,079	140,080	\$ 420.24
		<b>TOTAL:</b>	\$ (16,958.40)

**INFLUENT STRENGTH ( Heart of the Valley Metropolitan Sewerage Facility)**

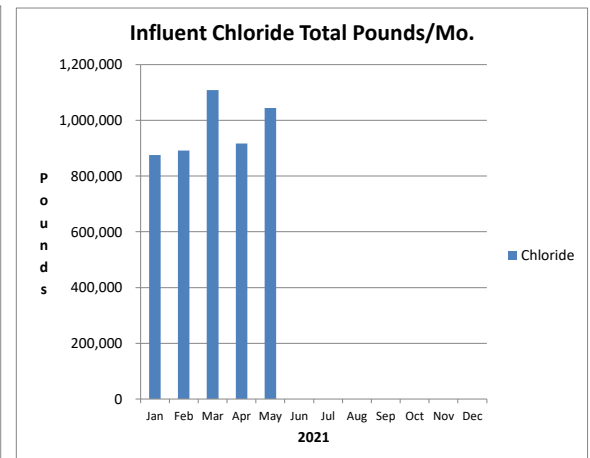
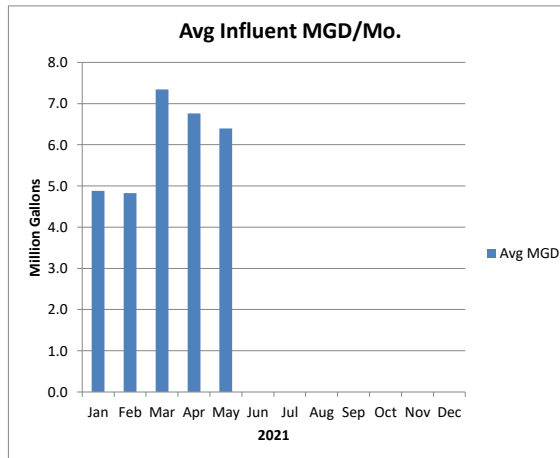
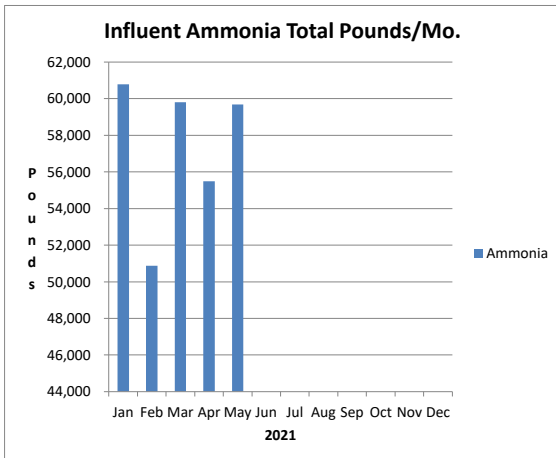
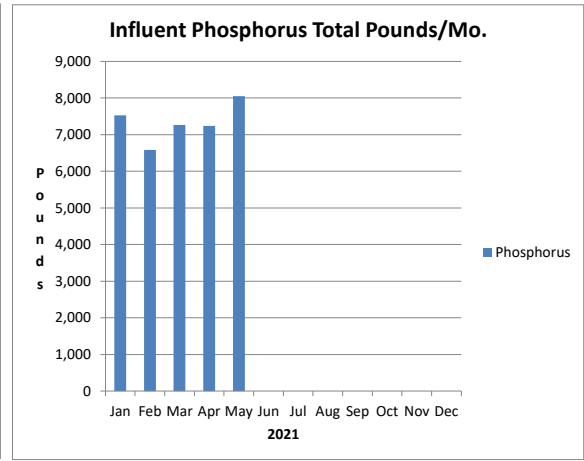
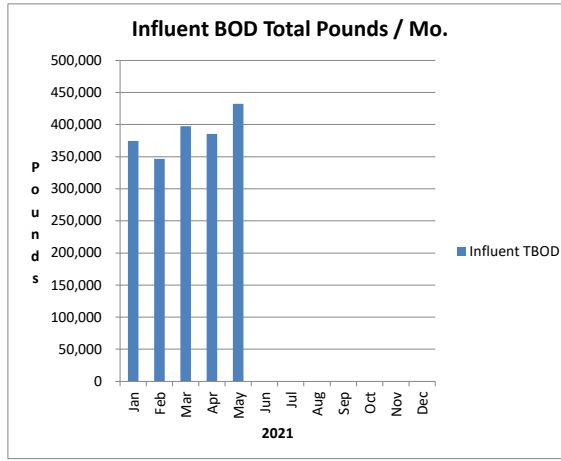
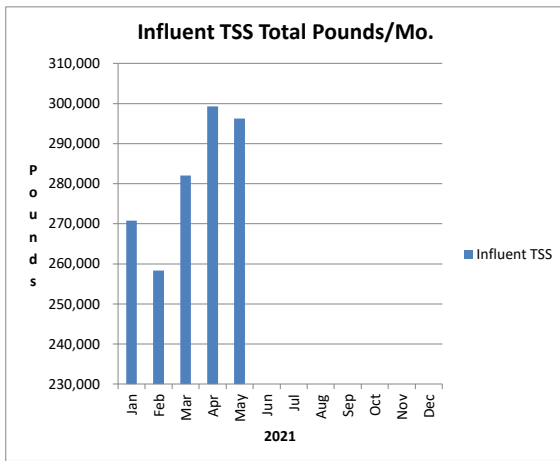
May 2021

MONTH	FLOW		TSS			BOD			TOTAL PHOSPHORUS			AMMONIA			CHLORIDE		
	Million * Gallons	Avg MGD	Avg mg/L	Avg #/day	Total #/Month	Avg mg/L	Avg #/day	Total # Month	Avg mg/L	Avg #/day	Total # Month	Avg mg/L	Avg #/day	Total # Month	Avg mg/L	Avg #/day	Total # Month
Jan	151.4	4.9	217	8,736	270,817	300	12,085	374,624	6.05	243	7,528	49.0	1961	60,780	702	28,228	875,077
Feb	135.2	4.8	231	8,334	258,362	311	12,383	346,731	5.91	235	6,583	46.4	1641	50,873	796	28,751	891,291
Mar	227.7	7.3	150	9,098	282,028	212	12,818	397,347	3.89	234	7,264	32.0	1,929	59,806	590	35,765	1,108,705
Apr	202.9	6.8	179	9,975	299,254	231	12,852	385,562	4.36	241	7,241	34.4	1,790	55,483	580	30,560	916,811
May	198.4	6.4	182	9,555	296,212	264	13,942	432,203	4.92	260	8,054	37.9	1,926	59,693	631	34,789	1,043,666
Jun																	
Jul																	
Aug																	
Sep																	
Oct																	
Nov																	
Dec																	
<b>Yearly Average</b>	183.1	6.0	192	9,140	281,335	264	12,816	387,294	5.02	243	7,334	39.9	1,849	57,327	660	31,619	967,110
<b>Yearly Total</b>	915.6				1,406,673			1,936,468			36,670			286,635			4,835,550
*Includes Hauled Waste [Plant Design Capacity]																	
		8.5		13,565			12,209			339			1,600				
[Max Design Capacity]																	
	11.9		16,278			14,651			407			1,920					
May % of Capacity																	
	54%		59%			95%			64%			100%					
May Max Daily Flow																	
	8.97																

**EFFLUENT QUALITY**

MONTH	FLOW		TSS			BOD			TOTAL PHOSPHORUS			AMMONIA			CHLORIDE	
	Million Gallons	Avg MGD	Avg mg/L	Avg #/day	Total #/Month	Avg mg/L	Avg #/day	Total # Month	Avg mg/L	Avg #/day	Total # Month	Avg mg/L	Avg #/day	Total # Month	Avg mg/L	
Jan	63.8	2.1	10.9	185	5,721	9.3	160	4,957	0.31	5.2	163	0.42	7.8	242	707	
Feb	66.3	2.4	11	206	5,759	10	196	5,499	0.31	5.9	167	0.42	7.7	238	808	
Mar	136.9	4.4	7.1	259	8,037	7.0	260	8,070	0.20	7.4	229	0.28	10.0	310	603	
Apr	123.5	4.1	6.5	222	6,664	5.8	198	5,945	0.19	6.4	193	0.31	10.2	315	600	
May	138.3	4.5	5.8	211	6,552	6.2	221	6,864	0.28	9.8	304	0.38	13.0	404	656	
Jun																
Jul																
Aug																
Sep																
Oct																
Nov																
Dec																
<b>Yearly Average</b>	105.8	3.5	8.2	217	6,547	7.7	207.2	6,267	0.26	7.0	211	0.36	9.7	301.6	675	
<b>Yearly Total</b>	528.8				32,733			31,335			1,056			1,507.9		
Effluent Gallons to Fox Energy (May)																
Million Gallons % to Fox Energy																
60.10 30%																
Effluent Gallons to Fox Energy (May)																
WEEK 1 327																
WEEK 2 241																
WEEK 3 143																
WEEK 4 169																
6 mo. Avg # 9.80 May-Oct																

Monthly Avg Limit	
Jan- March	10 mg/L
April-May	11 mg/L
June-Sept	4.4 mg/L
Oct- Dec	18 mg/L



# RAIN GAUGES

## DAILY RAINFALL TOTALS

MONTH: MAY

YEAR: 2021

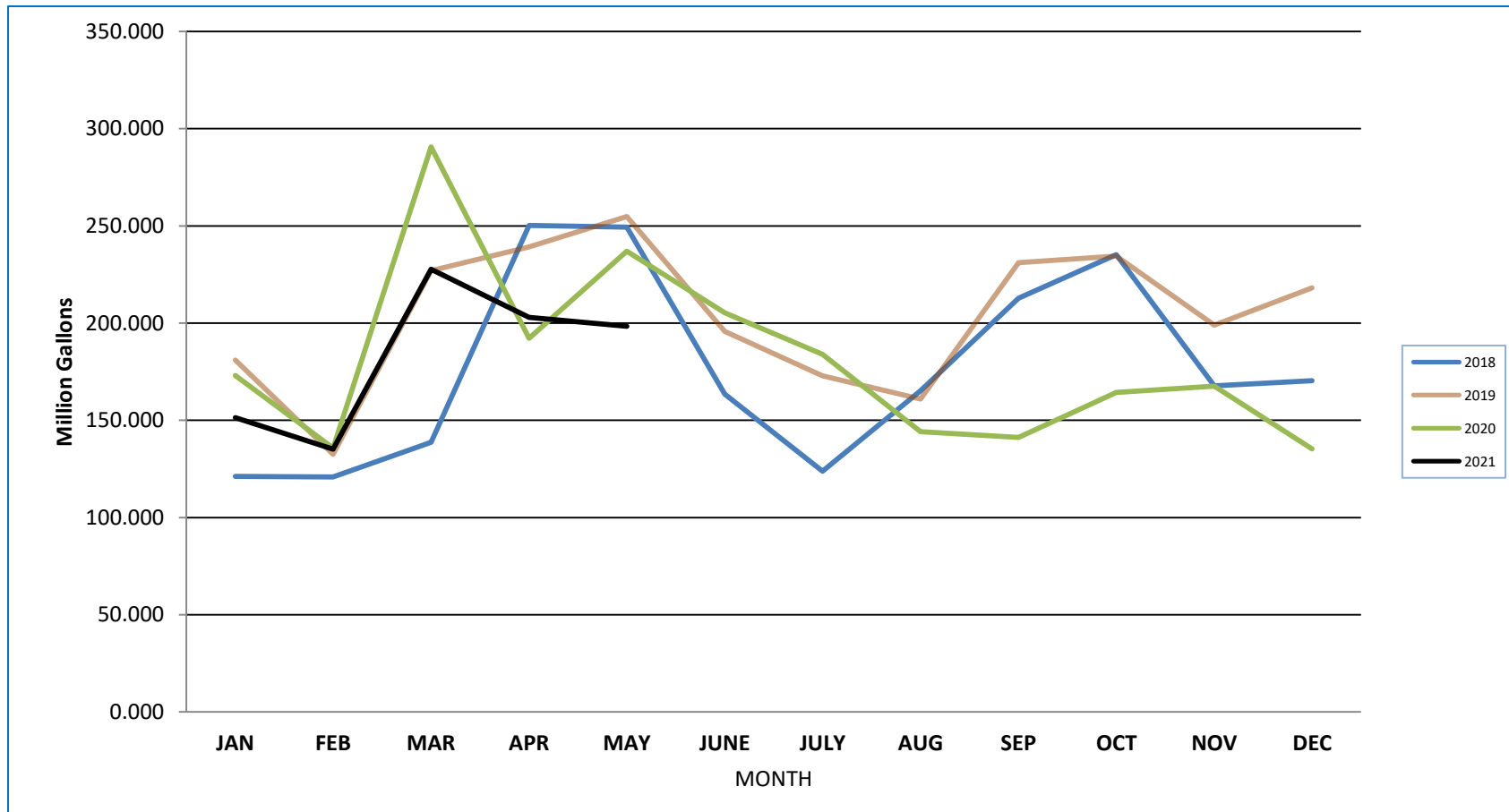
<u>DATE</u>	<u>PLANT</u> <u>INCHES</u>	<u>KAUKAUNA</u> <u>INCHES</u>	<u>LITTLE CHUTE</u> <u>INCHES</u>	<u>KIMBERLY</u> <u>INCHES</u>	<u>DARBOY</u> <u>INCHES</u>
1	0.00	0.00	0.00	0.00	0.00
2	0.60	0.82	0.68	0.82	0.90
3	0.32	0.35	0.33	0.35	0.40
4	0.00	0.01	0.00	0.01	0.01
5	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00
7	0.02	0.00	0.00	0.00	0.02
8	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00
19	0.27	0.25	0.39	0.31	0.28
20	0.00	0.00	0.00	0.00	0.00
21	0.11	0.15	0.21	0.21	0.18
22	0.00	0.00	0.01	0.00	0.00
23	0.30	0.00	0.00	0.00	0.00
24	0.09	0.13	0.11	0.13	0.15
25	0.25	0.21	0.25	0.28	0.29
26	0.04	0.03	0.02	0.03	0.03
27	0.41	0.36	0.41	0.47	0.42
28	0.00	0.01	0.01	0.01	0.01
29	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00
31	0.18	0.21	0.18	0.23	0.15
<b>TOTAL:</b>	2.59	2.53	2.60	2.85	2.84

# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
<b>2018</b>	121.122	120.841	138.664	250.232	249.379	163.461	123.780	165.254	212.799	235.273	167.657	170.368
<b>2019</b>	181.037	132.459	226.921	239.147	254.810	195.654	172.916	160.932	231.033	234.439	199.024	218.097
<b>2020</b>	172.999	135.703	290.643	192.150	236.946	205.368	184.011	144.085	141.266	164.399	167.558	135.257
<b>2021</b>	151.398	135.21	227.688	202.920	198.367							

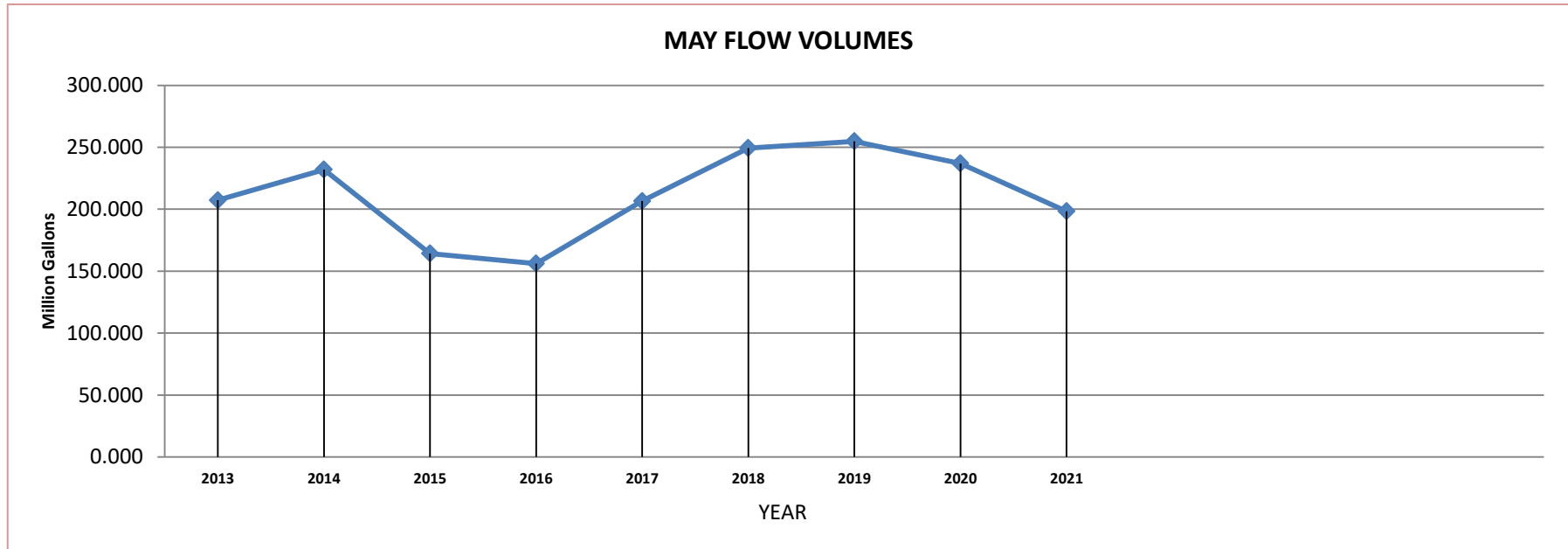
\*\*\* FLOW VOLUMES REPORTED IN MILLION GALLONS \*\*\*

## MONTHLY FLOW VOLUMES



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

<u>Year</u>	<u>May Flow Million Gallons</u>	<u>Precipitation Inches</u>
2013	207.246	2.76
2014	231.951	3.03
2015	164.246	3.44
2016	156.148	2.52
2017	206.521	2.88
2018	249.379	3.71
2019	254.810	4.55
2020	236.946	4.82
2021	198.367	2.71



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

## % CONTRIBUTION BY COMMUNITY - FLOW GALLONS

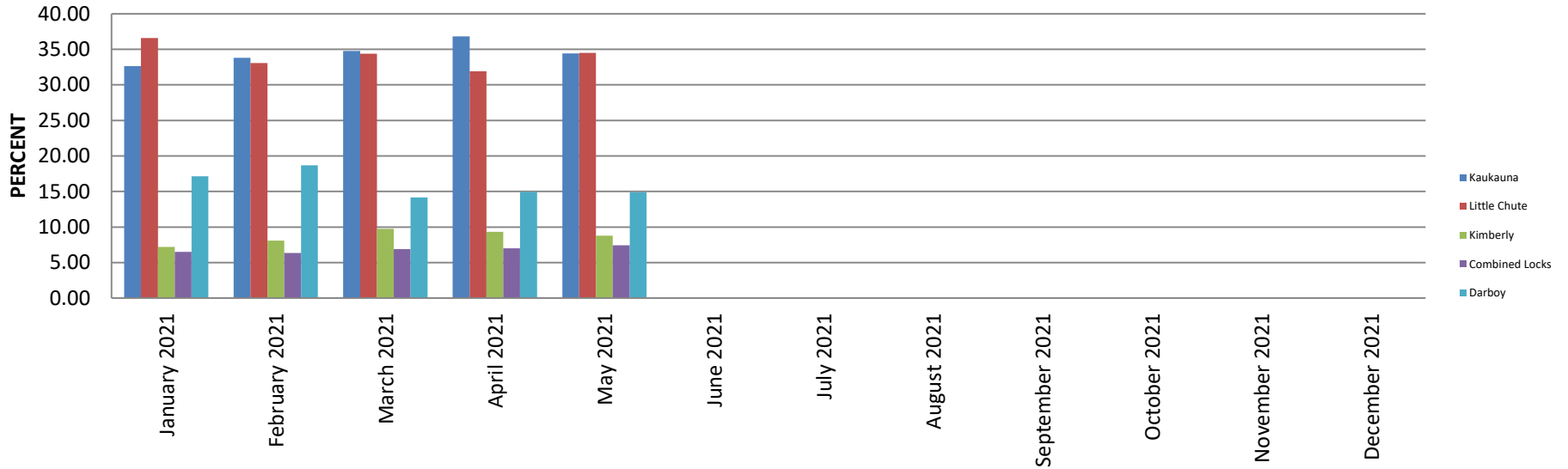
	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>	<u>Rainfall - Inches*</u>
January 2021	32.64	36.57	7.19	6.49	17.12	0.71
February 2021	33.80	33.06	8.11	6.34	18.68	1.29
March 2021	34.77	34.39	9.76	6.90	14.18	1.79
April 2021	36.81	31.89	9.34	7.01	14.95	1.53
May 2021	34.41	34.51	8.79	7.42	14.88	2.71
June 2021						
July 2021						
August 2021						
September 2021						
October 2021						
November 2021						
December 2021						

\* Nov-March=Rain,Melted Snow, Etc ( in.)

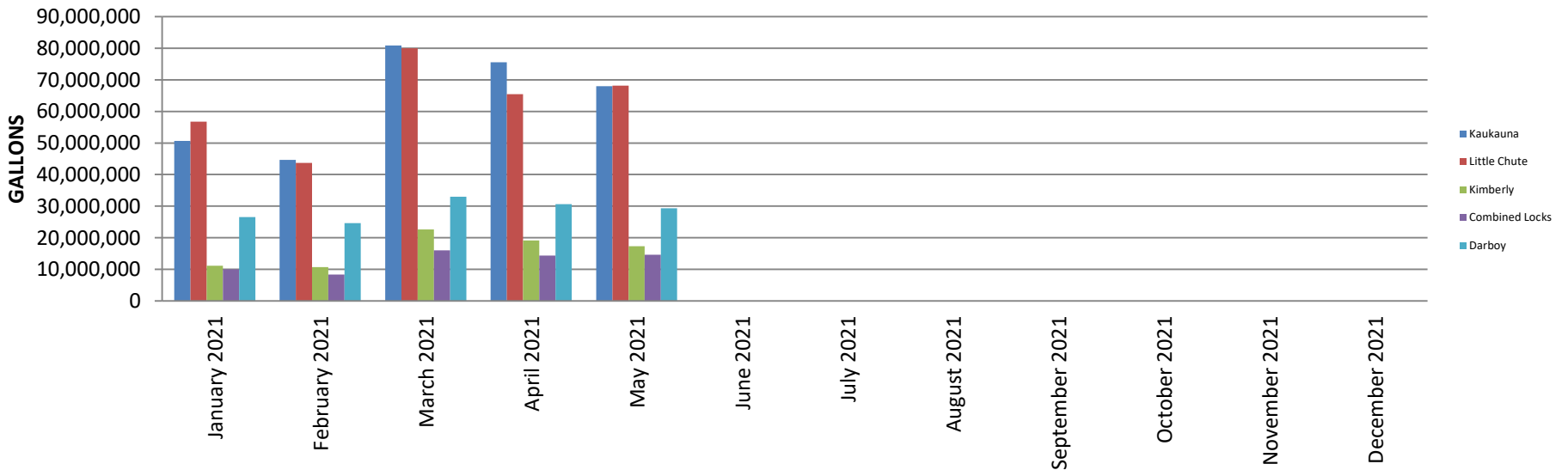
## GALLONS CONTRIBUTION BY COMMUNITY - FLOW GALLONS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2021	50,653,000	56,758,000	11,153,000	10,069,000	26,563,000
February 2021	44,627,000	43,652,000	10,710,000	8,367,000	24,666,000
March 2021	80,825,000	79,925,000	22,677,000	16,031,000	32,969,000
April 2021	75,497,000	65,413,000	19,159,000	14,369,000	30,652,000
May 2021	67,944,000	68,137,000	17,364,000	14,643,000	29,378,000
June 2021					
July 2021					
August 2021					
September 2021					
October 2021					
November 2021					
December 2021					

## % CONTRIBUTION BY COMMUNITY - FLOW GALLONS



## GALLONS CONTRIBUTION BY COMMUNITY - FLOW GALLONS





# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

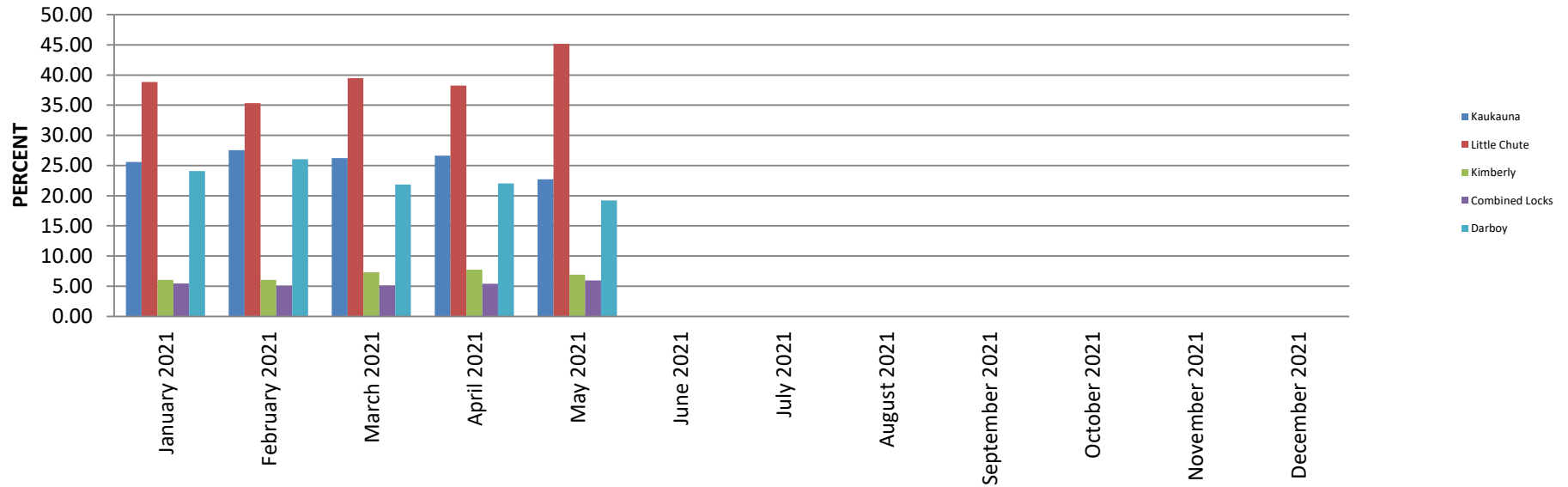
## % CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2021	25.57	38.82	6.06	5.46	24.09
February 2021	27.56	35.35	6.03	5.03	26.03
March 2021	26.22	39.50	7.33	5.10	21.85
April 2021	26.62	38.23	7.71	5.39	22.04
May 2021	22.73	45.17	6.91	5.97	19.22
June 2021					
July 2021					
August 2021					
September 2021					
October 2021					
November 2021					
December 2021					

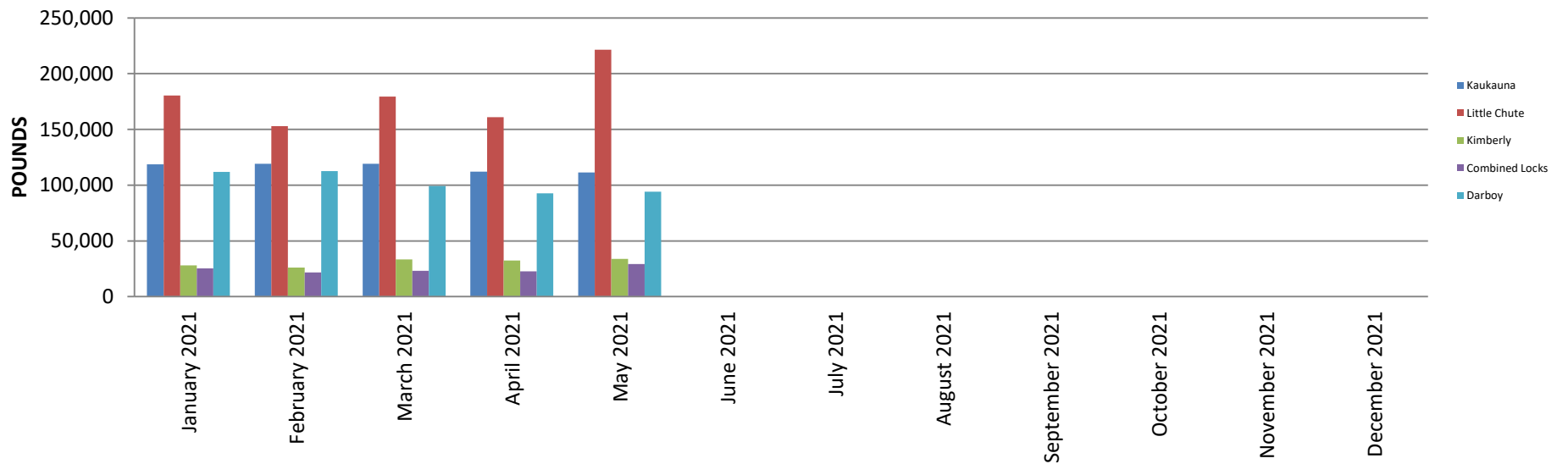
## POUNDS CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2021	118,779	180,309	28,143	25,348	111,869
February 2021	119,174	152,882	26,084	21,751	112,551
March 2021	119,072	179,382	33,269	23,166	99,206
April 2021	112,044	160,891	32,455	22,682	92,757
May 2021	111,433	221,437	33,871	29,267	94,209
June 2021					
July 2021					
August 2021					
September 2021					
October 2021					
November 2021					
December 2021					

## % CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS



## POUNDS CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

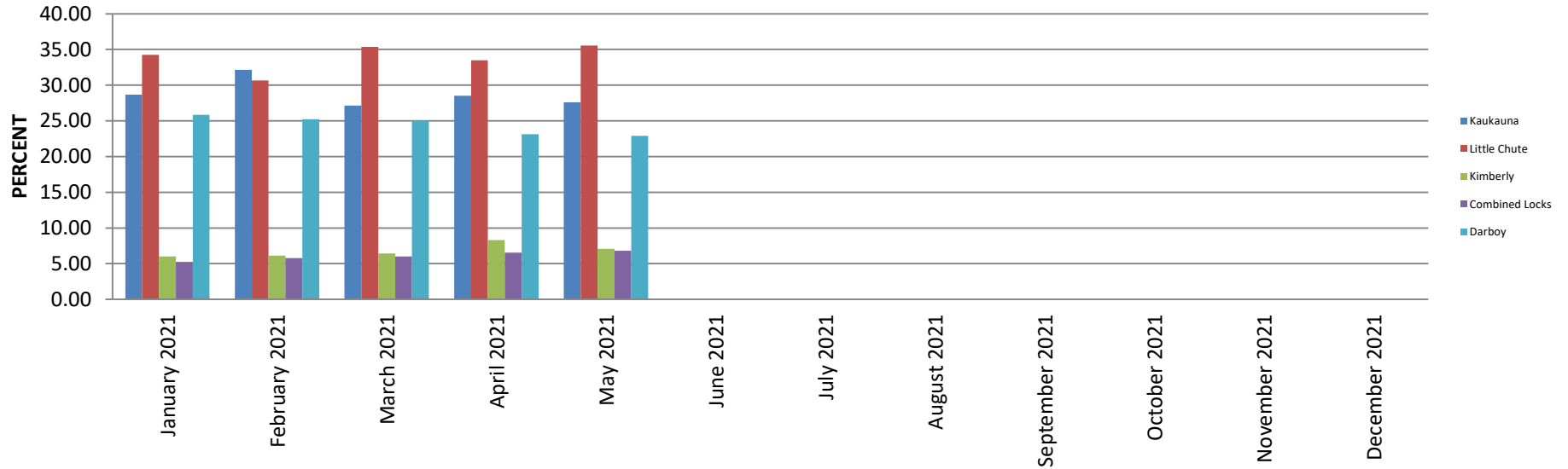
## % CONTRIBUTION BY COMMUNITY -TOTAL SUSPENDED SOLIDS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2021	28.68	34.25	6.00	5.23	25.84
February 2021	32.17	30.68	6.13	5.80	25.22
March 2021	27.14	35.38	6.43	6.02	25.03
April 2021	28.52	33.50	8.29	6.55	23.14
May 2021	27.60	35.57	7.09	6.82	22.91
June 2021					
July 2021					
August 2021					
September 2021					
October 2021					
November 2021					
December 2021					

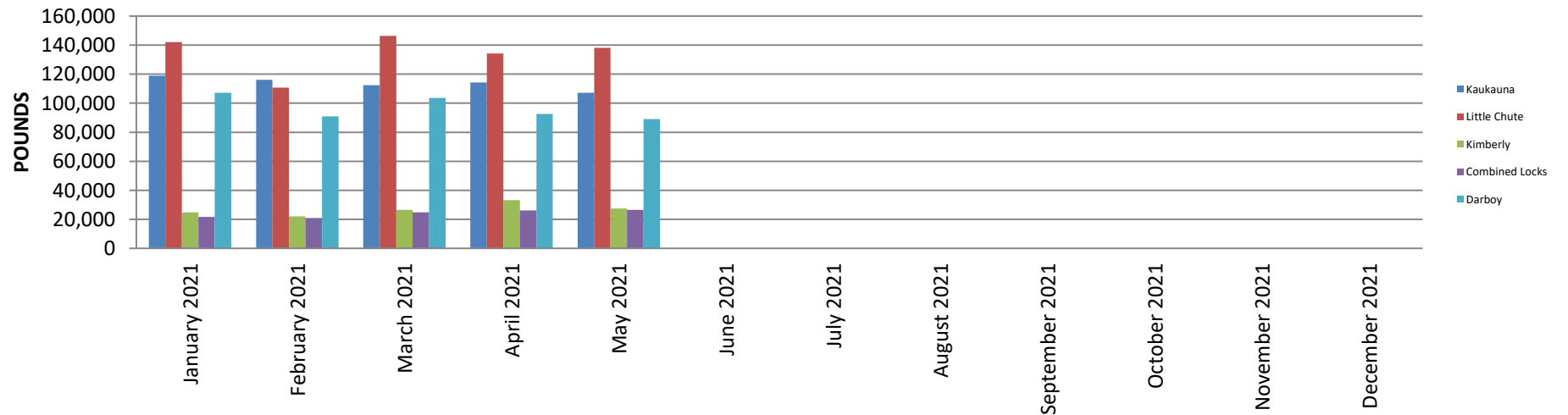
## POUNDS CONTRIBUTION BY COMMUNITY - TOTAL SUSPENDED SOLIDS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2021	118,920	141,992	24,872	21,690	107,110
February 2021	116,061	110,689	22,100	20,913	90,998
March 2021	112,310	146,417	26,596	24,931	103,563
April 2021	114,242	134,187	33,214	26,252	92,683
May 2021	107,201	138,146	27,544	26,484	88,982
June 2021					
July 2021					
August 2021					
September 2021					
October 2021					
November 2021					
December 2021					

## % CONTRIBUTION BY COMMUNITY -TOTAL SUSPENDED SOLIDS POUNDS



## POUNDS CONTRIBUTION BY COMMUNITY - TOTAL SUSPENDED SOLIDS POUNDS



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

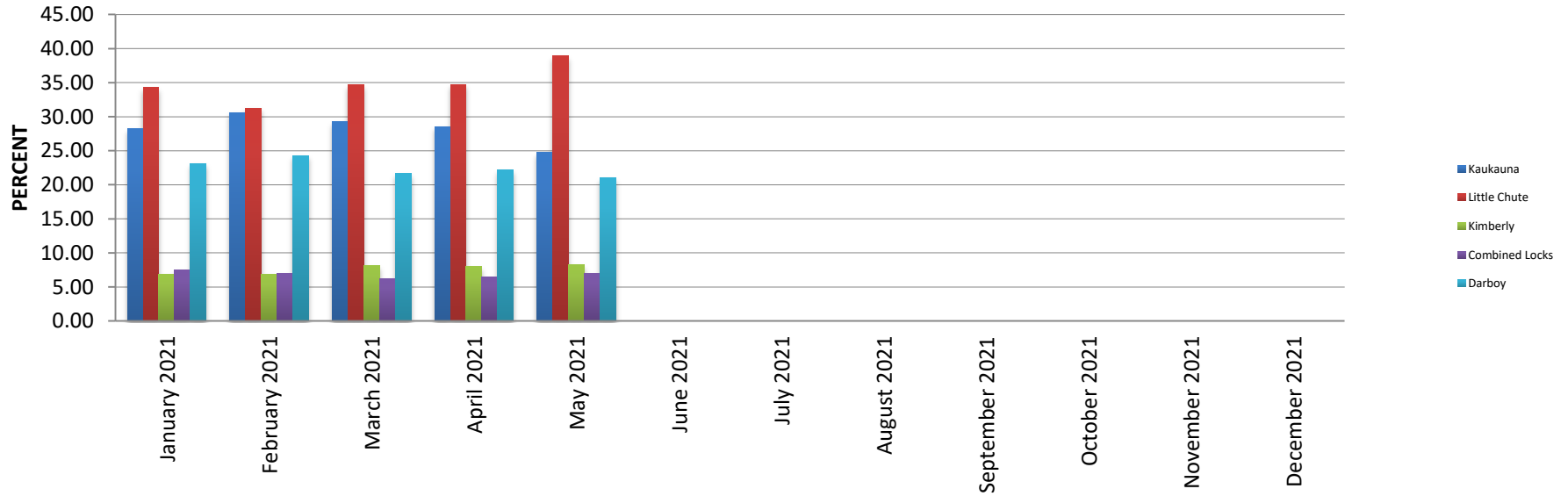
## % CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2021	28.27	34.26	6.86	7.47	23.14
February 2021	30.61	31.27	6.83	6.98	24.31
March 2021	29.31	34.64	8.20	6.16	21.69
April 2021	28.55	34.76	8.03	6.45	22.22
May 2021	24.77	38.94	8.27	6.97	21.05
June 2021					
July 2021					
August 2021					
September 2021					
October 2021					
November 2021					
December 2021					

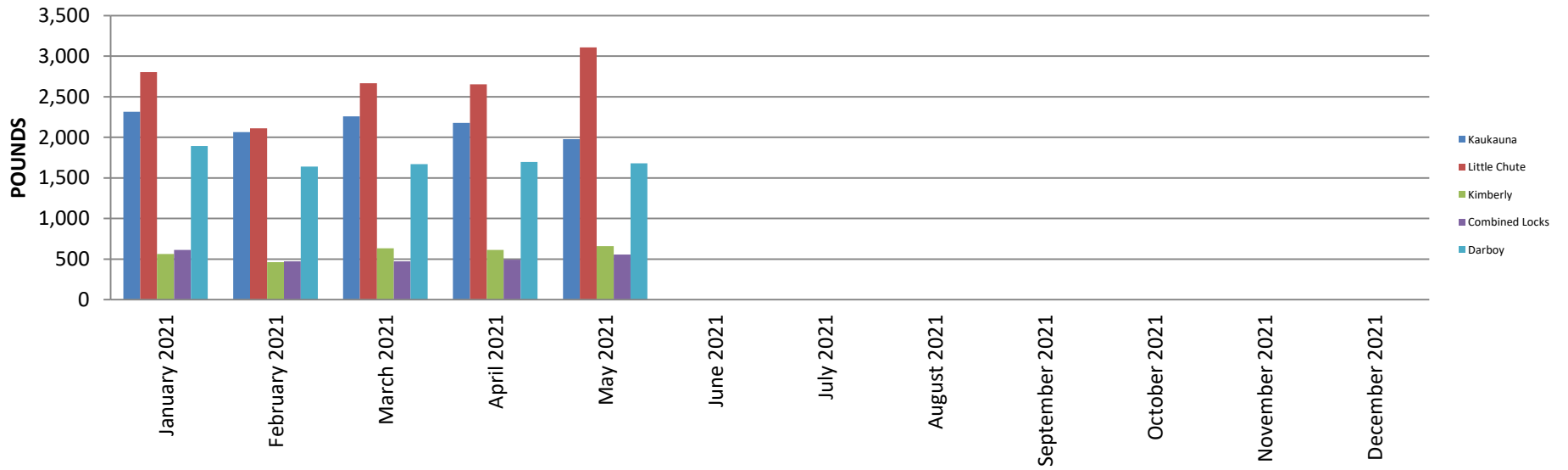
## POUNDS CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2021	2,314	2,805	561	611	1,894
February 2021	2,065	2,110	461	471	1,641
March 2021	2,257	2,667	632	474	1,670
April 2021	2,179	2,654	613	492	1,696
May 2021	1,978	3,108	661	556	1,680
June 2021					
July 2021					
August 2021					
September 2021					
October 2021					
November 2021					
December 2021					

## % CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS



## POUNDS CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

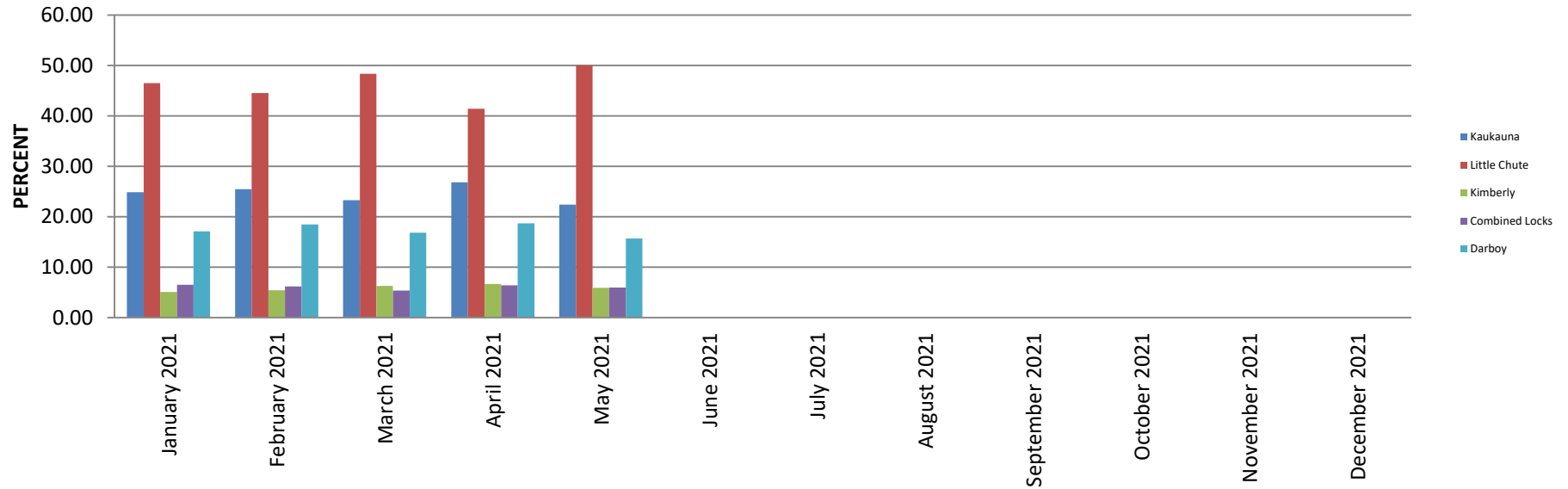
## % CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2021	24.85	46.49	5.08	6.49	17.09
February 2021	25.48	44.51	5.39	6.19	18.44
March 2021	23.25	48.34	6.26	5.35	16.81
April 2021	26.82	41.42	6.68	6.41	18.66
May 2021	22.42	50.07	5.89	5.94	15.67
June 2021					
July 2021					
August 2021					
September 2021					
October 2021					
November 2021					
December 2021					

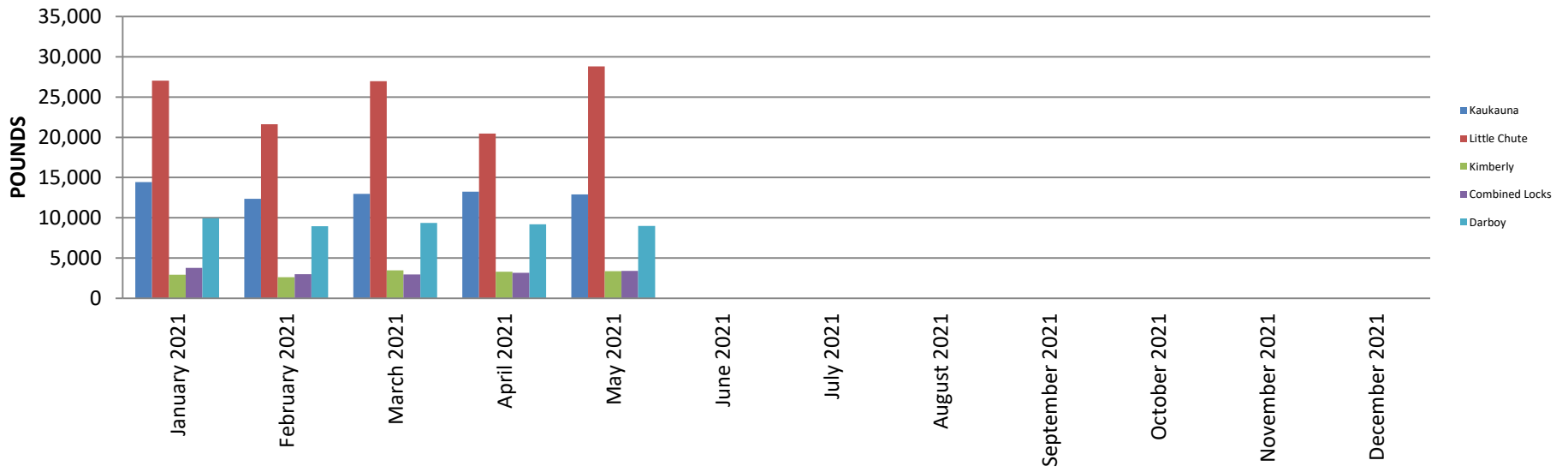
## POUNDS CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2021	14,449	27,032	2,951	3,776	9,940
February 2021	12,371	21,607	2,615	3,003	8,950
March 2021	12,960	26,953	3,488	2,980	9,373
April 2021	13,237	20,445	3,298	3,165	9,211
May 2021	12,894	28,791	3,387	3,417	9,009
June 2021					
July 2021					
August 2021					
September 2021					
October 2021					
November 2021					
December 2021					

### % CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS



### POUNDS CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS





# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

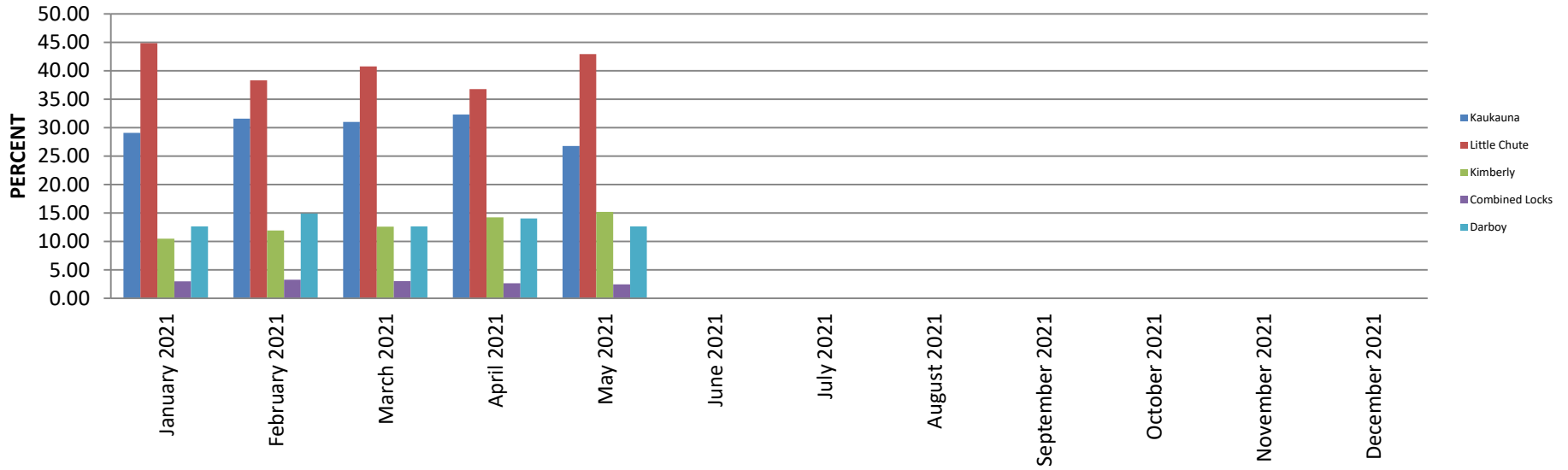
## % CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2021	29.06	44.82	10.50	2.98	12.63
February 2021	31.59	38.33	11.91	3.26	14.91
March 2021	31.00	40.75	12.58	3.03	12.63
April 2021	32.28	36.77	14.23	2.66	14.06
May 2021	26.79	42.93	15.18	2.45	12.64
June 2021					
July 2021					
August 2021					
September 2021					
October 2021					
November 2021					
December 2021					

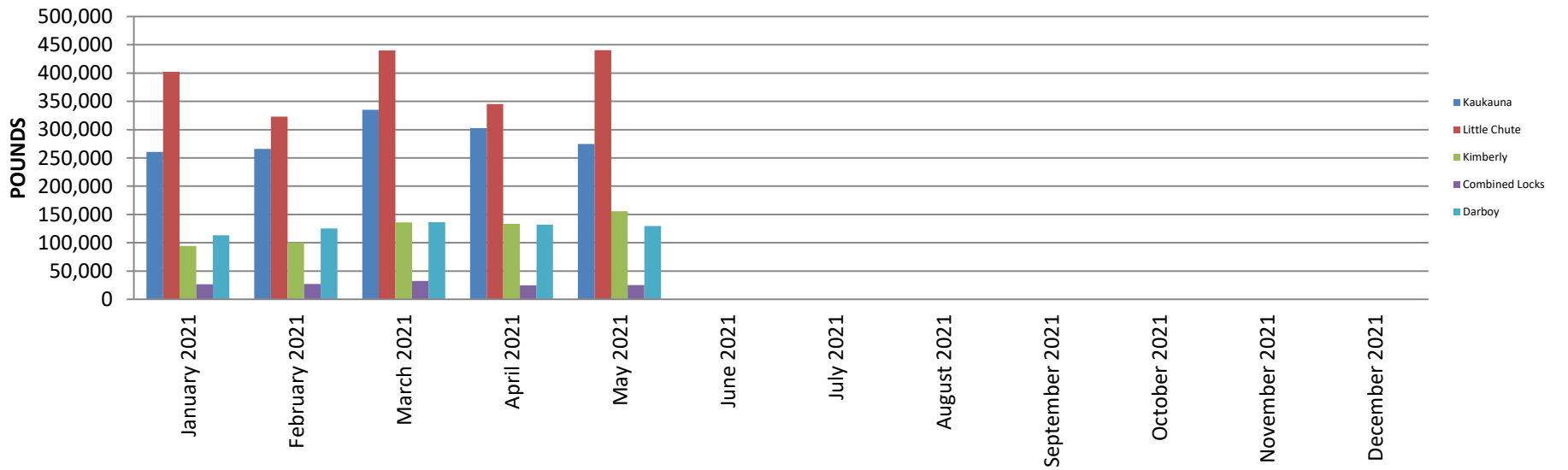
## POUNDS CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2021	260,808	402,271	94,270	26,746	113,365
February 2021	266,097	322,891	100,337	27,435	125,551
March 2021	334,840	440,145	135,920	32,675	136,439
April 2021	302,901	345,085	133,539	24,985	131,948
May 2021	274,875	440,533	155,789	25,164	129,699
June 2021					
July 2021					
August 2021					
September 2021					
October 2021					
November 2021					
December 2021					

## % CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS

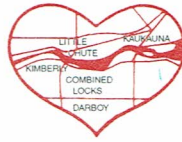


## POUNDS CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS



**DISTRICT DIRECTOR:**

Brian M. Helminger

**COMMISSIONERS:**

David J. Casper, President  
 Bruce M. Siebers, Vice-Pres.  
 Patrick E. Hennessey, Secretary  
 Kevin P. Coffey  
 John W. Sundelius

**SERVING:**

Combined Locks  
 Kaukauna  
 Kimberly  
 Little Chute  
 Darboy S.D.

**Heart of the Valley****METROPOLITAN SEWERAGE DISTRICT**

801 THILMANY ROAD  
 KAUKAUNA, WISCONSIN 54130  
 (920) 766-5731 FAX (920) 766-5733  
 www.hvmsd.org

**Facility:** Wisconsin Public Service Corporation - Fox Energy Center  
 P.O. Box 5651  
 Bismarck, ND 58506

**Attn:** Account # N2310E

**Month:** May

**Year:** 2021

## Gallons of Final Effluent Purchased (Billing)

<u>Date</u>	<u>Gallons</u>	<u>Date</u>	<u>Gallons</u>
5/1/2021	1,939,000	5/21/2021	3,298,000
5/2/2021	484,000	5/22/2021	3,328,000
5/3/2021	0	5/23/2021	2,806,000
5/4/2021	0	5/24/2021	3,420,000
5/5/2021	0	5/25/2021	3,558,000
5/6/2021	0	5/26/2021	3,175,000
5/7/2021	0	5/27/2021	2,709,000
5/8/2021	0	5/28/2021	2,554,000
5/9/2021	0	5/29/2021	2,131,000
5/10/2021	0	5/30/2021	2,341,000
5/11/2021	703,000	5/31/2021	2,467,000
5/12/2021	586,000		
5/13/2021	1,976,000		
5/14/2021	3,249,000		
5/15/2021	2,779,000		
5/16/2021	2,948,000		
5/17/2021	3,489,000		
5/18/2021	3,382,000		
5/19/2021	3,304,000		
5/20/2021	3,474,000		
		<b>Total:</b>	<b>60,100,000</b>

**Facility:** Wisconsin Public Service Corporation - Fox Energy Center  
P.O. Box 5651  
Bismarck, ND 58506

**Attn:** Account # N2310E

## **MONTHLY BILLING**

**Month:** May

**Year:** 2021

**GALLONS PURCHASED:** 60,100,000

**BILLING RATE:** \$0.1619962 PER 1000 GALLONS

**TOTAL AMOUNT DUE: \$9,735.97**

**Heart of the Valley  
Metropolitan Sewerage District**

**Fox Energy Revenue  
From the Sale of Final Effluent**

**2021**

**Final Effluent Sent to Fox Energy Facility**

**Gallons: 386,719,000**

**Charge Per 1000 Gallons: \$0.1619962 Per 1000 Gallons**

**Sale of Final Effluent (Revenue Collected): \$62,647.01**