

## FLOW AND STRENGTH PROJECTIONS

MONTH: November 2017

	<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)	150,559,857	121,786,500	-28,773,357	\$ 126,018.60	\$ 101,935.30	\$ (24,083.30)
B.O.D. (#s)	244,142	267,158	23,016	\$ 64,697.63	\$ 70,796.87	\$ 6,099.24
S. SOLIDS (#s)	295,506	298,240	2,734	\$ 77,127.07	\$ 77,840.64	\$ 713.57
PHOSPHORUS (#s)	6,470	6,223	-247	\$ 39,699.92	\$ 38,184.33	\$ (1,515.59)
AMMONIA-N (#s)	35,341	40,046	4,705	\$ 57,429.13	\$ 65,074.75	\$ 7,645.63
CHLORIDES (#s)	552,205	603,457	51,252	\$ 2,761.03	\$ 3,017.29	\$ 256.26
			<b>TOTAL:</b>	\$ 367,733.37	\$ 356,849.17	\$ (10,884.19)

(THRU NOVEMBER 2017)

PROJECTED FOR 2017

	<u>END OF YEAR PROJECTED</u>	<u>YEAR TO DATE SURPLUS/ DEFICIT</u>	<u>YEAR TO DATE SURPLUS/ DEFICIT \$\$</u>
FLOW (GALLONS)	1,933,366,797	206,043,530	\$ 172,458.43
B.O.D. (#s)	3,232,707	425,260	\$ 112,693.95
S. SOLIDS (#s)	4,183,878	-142,045	\$ (37,073.69)
PHOSPHORUS (#s)	84,963	-4,296	\$ (26,360.56)
AMMONIA-N (#s)	423,820	64,878	\$ 105,426.73
CHLORIDES (#s)	7,342,132	1,673,747	\$ 8,368.73
		<b>TOTAL:</b>	\$ 335,513.60

# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

MONTH: NOVEMBER 2017

## HYDRAULIC AND ORGANIC LOADINGS DATA

### INFLUENT

TOTAL FLOW TO PLANT: 124,659,000 GALLONS  
 AVERAGE B.O.D. : 225 mg/L  
 AVERAGE SUSPENDED SOLIDS : 213 mg/L  
 AVERAGE PHOSPHORUS : 5.77 mg/L  
 AVERAGE AMMONIA-N : 38.58 mg/L  
 AVERAGE CHLORIDES : 613.85 mg/L

MAXIMUM DAILY FLOW TO PLANT:  
4,736,000

### PERCENT (%) BY COMMUNITY OF TOTAL MONTHLY VOLUME TREATED AT WWTP

<u>COMMUNITY</u>	<u>FLOW</u>	<u>BOD</u>	<u>TSS</u>	<u>PHOSPHORUS</u>	<u>AMMONIA</u>	<u>CHLORIDES</u>
KAUKAUNA	39.12	28.99	30.22	30.21	33.86	34.28
LITTLE CHUTE	24.30	28.14	28.91	25.44	31.24	32.46
KIMBERLY	10.41	10.77	11.52	10.41	7.45	12.81
COMBINED LOCKS	5.72	7.54	8.17	8.21	6.02	2.48
DARBOY	20.44	24.57	21.17	25.73	21.42	17.97

### AVERAGE DAILY INFLUENT LOADINGS

FLOW : 4,155,300 GALLONS  
 B.O.D. : 7,807 POUNDS  
 SUSPENDED SOLIDS : 7,388 POUNDS  
 PHOSPHORUS : 200 POUNDS  
 AMMONIA-N : 1,337 POUNDS  
 CHLORIDES : 21,273 POUNDS

<u>%</u>
34.9
53.3
45.4
49.1
69.6

### PLANT DESIGN CRITERIA

11,900,000 GALLONS/DAY  
 14,651 POUNDS/DAY  
 16,278 POUNDS/DAY  
 407 POUNDS/DAY  
 1,920 POUNDS/DAY

### FINAL EFFLUENT

MONTHLY  
AVERAGE  
 FLOW: 1,985,367  
 cB.O.D. : 6.44 mg/L  
 SUSPENDED SOLIDS : 25.55 mg/L  
 PHOSPHORUS : 0.57 mg/L  
 AMMONIA-N : 0.89 mg/L  
 CHLORIDES : 606.15 mg/L

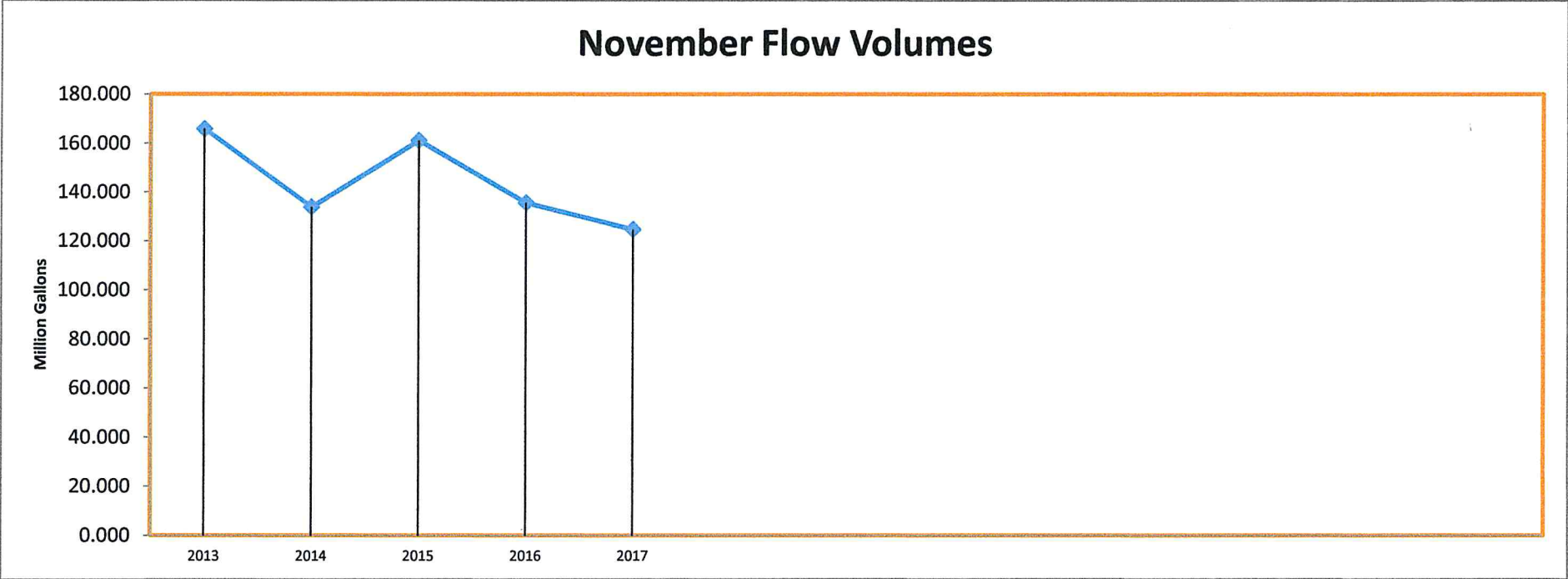
<u>%</u>
25.7
85.2
57.3
5.0

### PERMIT LIMIT

25 mg/L  
 30 mg/L  
 1 mg/L  
 18 mg/L

# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

<u>Year</u>	<u>November Flow Million Gallons</u>	<u>Precipitation Inches</u>
2013	165.861	2.76
2014	133.835	2.52
2015	161.094	2.21
2016	135.607	1.73
2017	124.659	0.97





# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

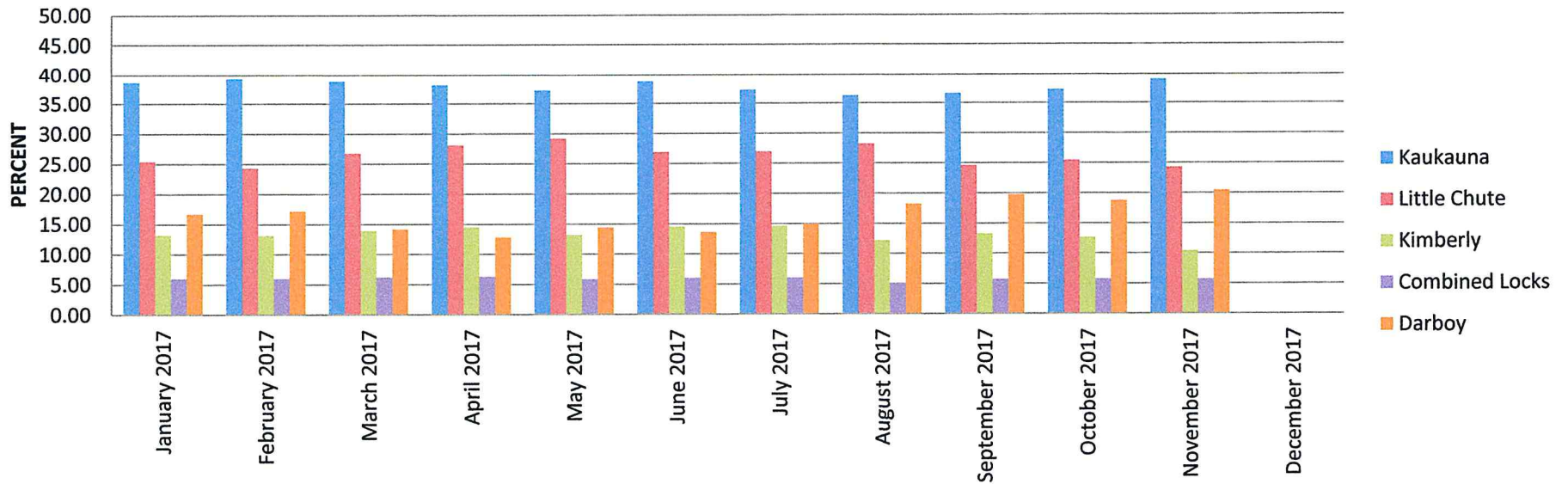
## % CONTRIBUTION BY COMMUNITY - FLOW GALLONS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>	<u>Rainfall - Inches</u>
January 2017	38.67	25.42	13.20	5.98	16.73	
February 2017	39.36	24.32	13.16	5.99	17.17	
March 2017	38.90	26.78	13.91	6.24	14.16	1.67
April 2017	38.22	28.14	14.51	6.32	12.81	3.44
May 2017	37.25	29.24	13.22	5.85	14.44	2.88
June 2017	38.85	26.93	14.59	6.04	13.60	6.37
July 2017	37.31	26.97	14.66	6.06	15.00	3.93
August 2017	36.28	28.27	12.20	5.06	18.20	2.75
September 2017	36.67	24.63	13.23	5.71	19.76	1.95
October 2017	37.31	25.49	12.67	5.77	18.75	2.30
November 2017	39.12	24.30	10.41	5.72	20.44	0.97
December 2017						

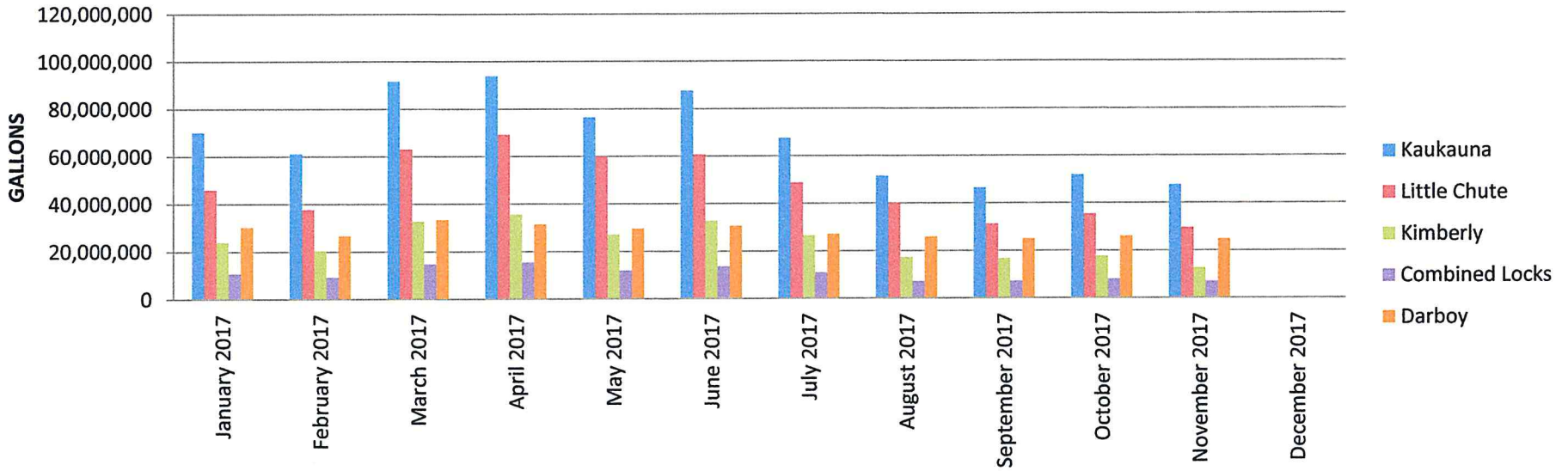
## GALLONS CONTRIBUTION BY COMMUNITY - FLOW GALLONS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2017	70,086,400	46,073,000	23,922,000	10,834,000	30,324,000
February 2017	61,107,920	37,766,000	20,426,000	9,296,000	26,665,000
March 2017	91,695,210	63,127,000	32,780,000	14,711,000	33,384,000
April 2017	93,844,850	69,108,000	35,626,000	15,513,000	31,464,000
May 2017	76,411,310	59,973,000	27,122,000	11,991,000	29,621,000
June 2017	87,589,660	60,724,000	32,887,000	13,613,000	30,656,000
July 2017	67,574,580	48,851,000	26,542,000	10,971,000	27,163,000
August 2017	51,567,980	40,182,000	17,342,000	7,191,000	25,871,000
September 2017	46,495,600	31,224,000	16,773,000	7,236,000	25,056,000
October 2017	51,879,350	35,437,000	17,621,000	8,023,000	26,076,000
November 2017	47,647,500	29,597,000	12,681,000	6,972,000	24,889,000
December 2017					

**% CONTRIBUTION BY COMMUNITY - FLOW GALLONS**



**GALLONS CONTRIBUTION BY COMMUNITY - FLOW GALLONS**



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

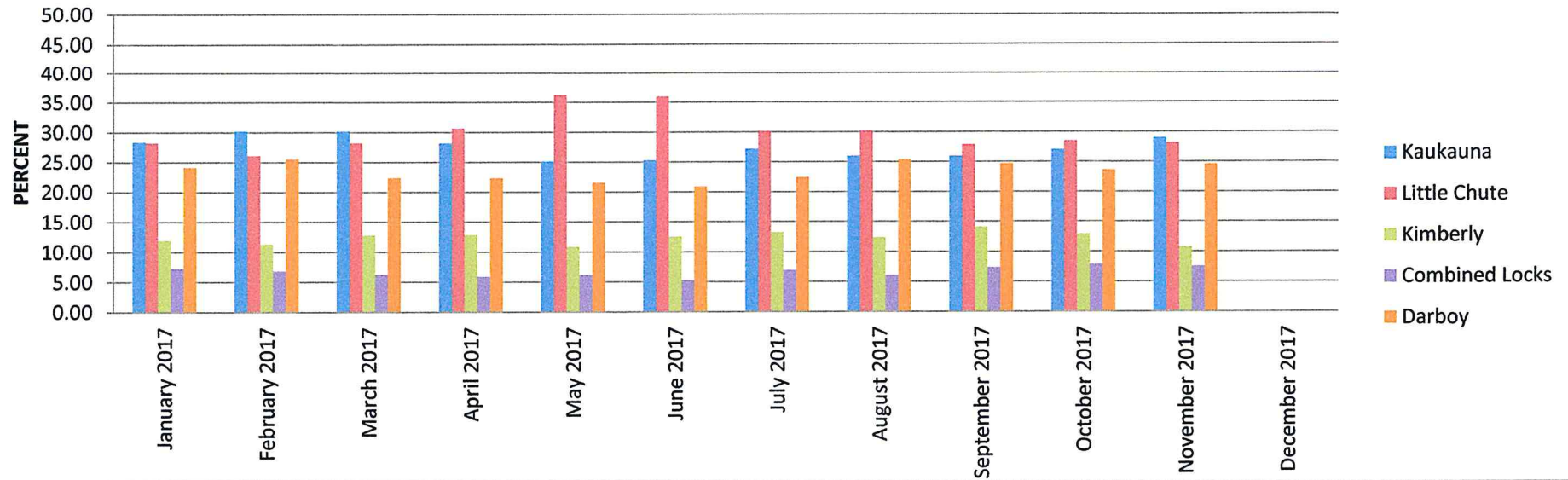
## % CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2017	28.37	28.24	11.98	7.28	24.13
February 2017	30.23	26.07	11.32	6.86	25.52
March 2017	30.25	28.23	12.81	6.29	22.42
April 2017	28.19	30.62	12.90	5.91	22.37
May 2017	25.14	36.24	10.89	6.17	21.56
June 2017	25.30	35.99	12.55	5.27	20.89
July 2017	27.19	30.12	13.31	6.96	22.43
August 2017	25.98	30.19	12.40	6.07	25.35
September 2017	25.94	27.88	14.12	7.36	24.71
October 2017	27.06	28.52	12.92	7.89	23.61
November 2017	28.99	28.14	10.77	7.54	24.57
December 2017					

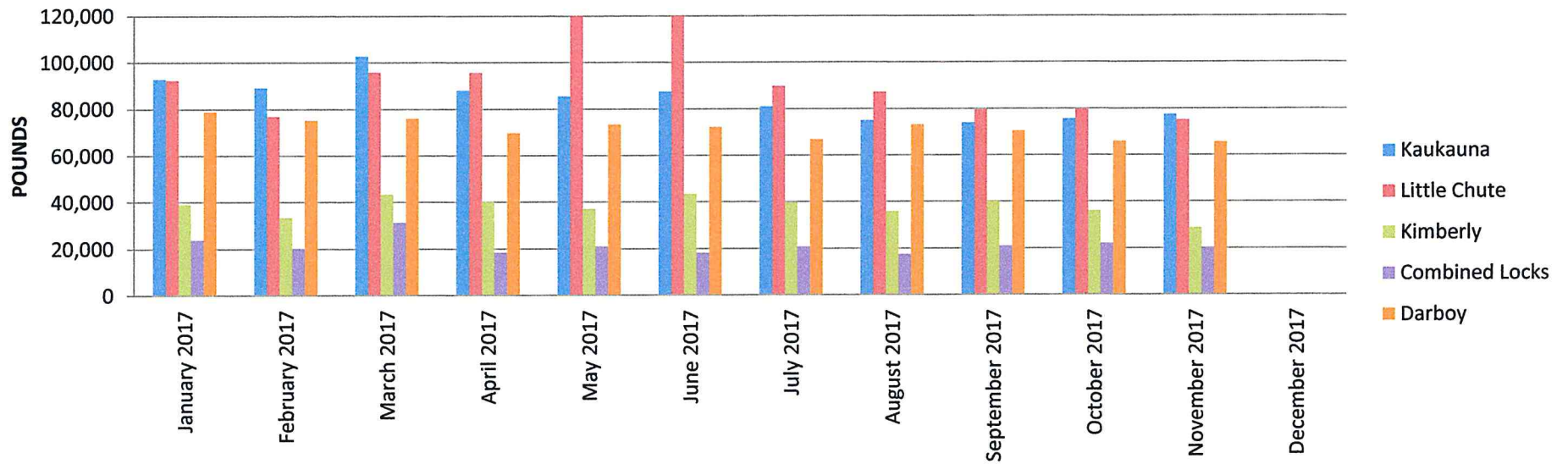
## POUNDS CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2017	92,752	92,337	39,172	23,785	78,888
February 2017	89,162	76,903	33,377	20,248	75,289
March 2017	102,646	95,788	43,450	31,332	76,077
April 2017	87,987	95,572	40,256	18,447	69,830
May 2017	85,596	123,409	37,097	21,002	73,421
June 2017	87,442	124,373	43,377	18,210	72,210
July 2017	81,048	89,782	39,668	20,746	66,860
August 2017	75,026	87,165	35,817	17,537	73,200
September 2017	73,971	79,501	40,257	20,999	70,457
October 2017	75,616	79,716	36,112	22,040	65,993
November 2017	77,443	75,183	28,765	20,136	65,632
December 2017					

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



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





# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

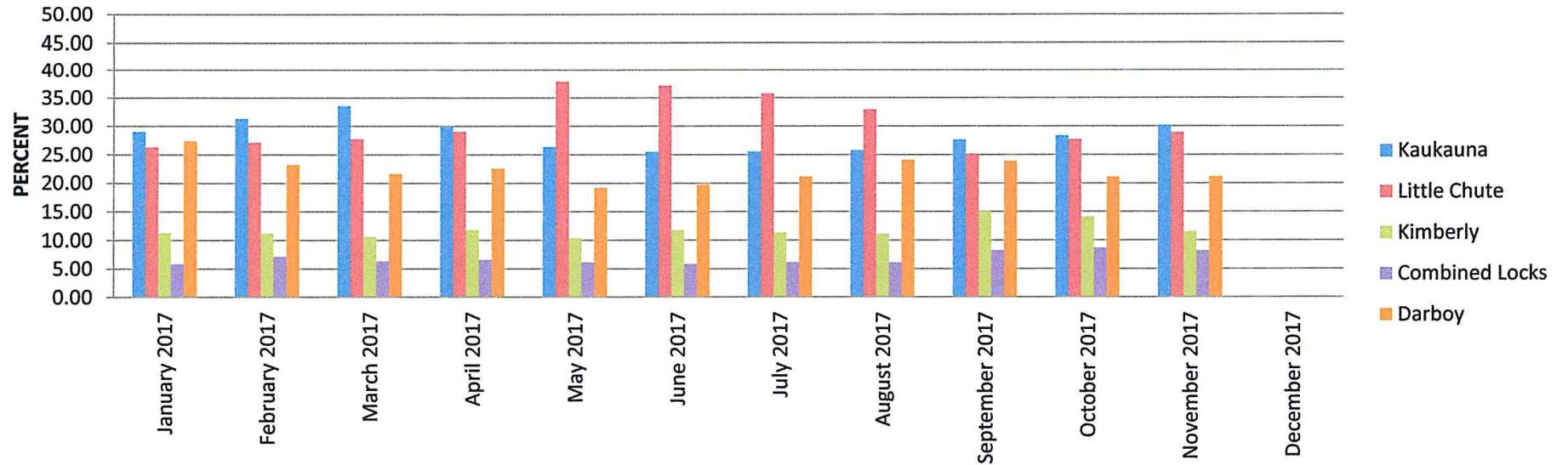
## % CONTRIBUTION BY COMMUNITY -TOTAL SUSPENDED SOLIDS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2017	29.08	26.35	11.30	5.83	27.43
February 2017	31.34	27.16	11.17	7.12	23.22
March 2017	33.61	27.78	10.63	6.32	21.66
April 2017	29.94	29.08	11.82	6.55	22.62
May 2017	26.40	37.88	10.36	6.14	19.20
June 2017	25.52	37.14	11.75	5.85	19.73
July 2017	25.55	35.76	11.37	6.12	21.20
August 2017	25.83	32.93	11.09	6.06	24.09
September 2017	27.68	25.15	15.05	8.22	23.90
October 2017	28.39	27.71	14.12	8.64	21.15
November 2017	30.22	28.91	11.52	8.17	21.17
December 2017					

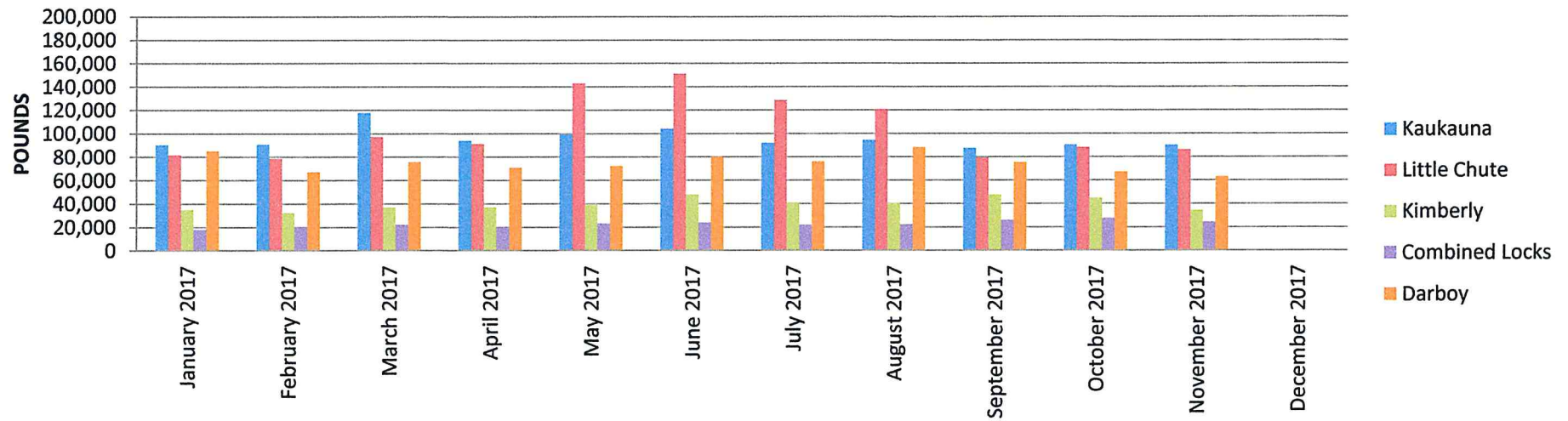
## POUNDS CONTRIBUTION BY COMMUNITY - TOTAL SUSPENDED SOLIDS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2017	90,234	81,769	35,081	18,106	85,135
February 2017	90,717	78,623	32,349	20,599	67,207
March 2017	117,799	97,395	37,259	22,157	75,928
April 2017	93,974	91,273	37,087	20,549	70,999
May 2017	99,643	142,965	39,109	23,189	72,476
June 2017	103,978	151,297	47,872	23,832	80,389
July 2017	91,863	128,574	40,876	22,021	76,217
August 2017	94,624	120,656	40,611	22,209	88,251
September 2017	87,471	79,460	47,561	25,990	75,521
October 2017	90,323	88,169	44,939	27,484	67,288
November 2017	90,130	86,236	34,368	24,376	63,129
December 2017					

## % CONTRIBUTION BY COMMUNITY -TOTAL SUSPENDED SOLIDS POUNDS



## POUNDS CONTRIBUTION BY COMMUNITY - TOTAL SUSPENDED SOLIDS POUNDS



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

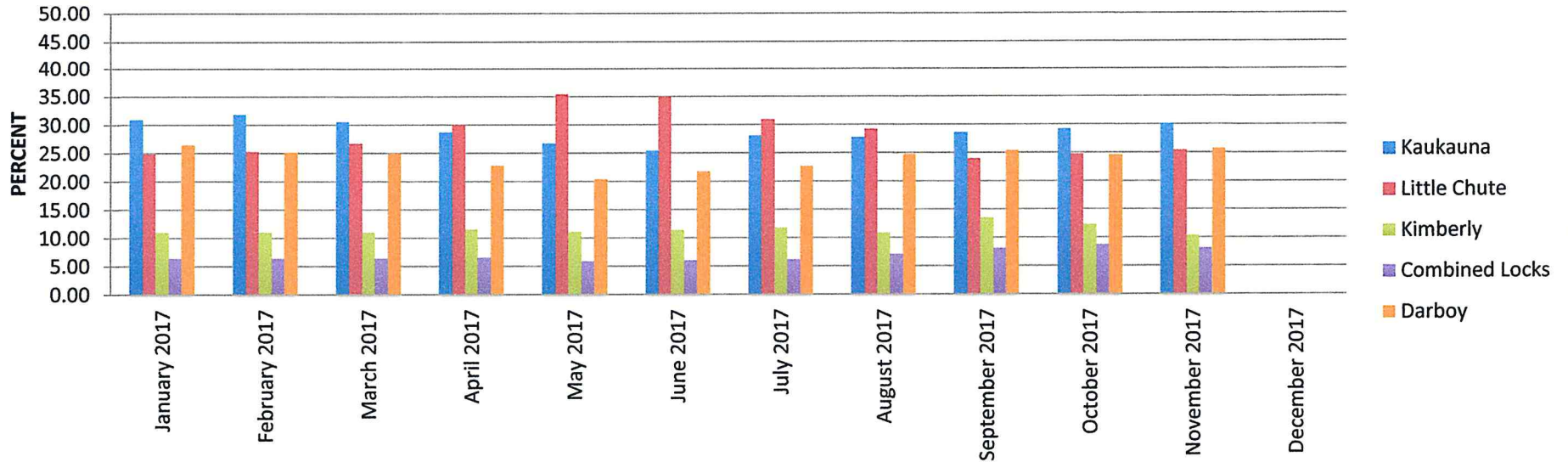
## % CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2017	30.98	24.92	11.11	6.44	26.55
February 2017	31.89	25.31	11.08	6.45	25.27
March 2017	30.56	26.80	11.05	6.48	25.11
April 2017	28.82	30.08	11.57	6.60	22.93
May 2017	26.79	35.47	11.23	6.00	20.51
June 2017	25.55	35.02	11.48	6.16	21.79
July 2017	28.10	31.00	11.81	6.30	22.78
August 2017	27.80	29.32	10.94	7.10	24.84
September 2017	28.66	24.02	13.60	8.22	25.51
October 2017	29.24	24.84	12.35	8.91	24.67
November 2017	30.21	25.44	10.41	8.21	25.73
December 2017					

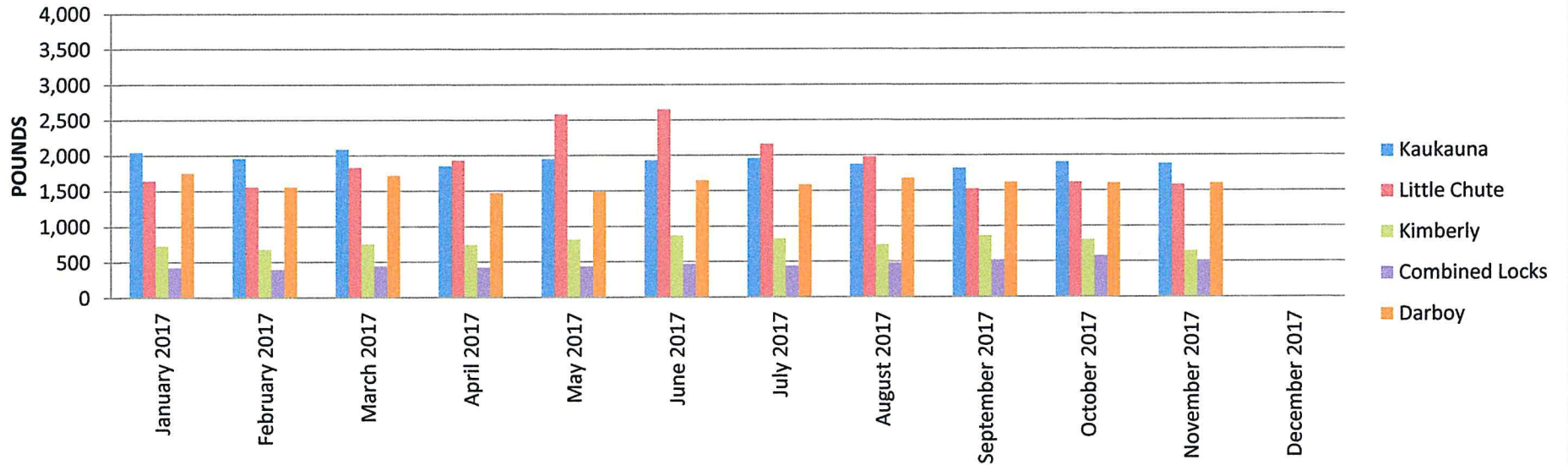
## POUNDS CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2017	2,044	1,643	733	425	1,751
February 2017	1,963	1,558	682	397	1,555
March 2017	2,088	1,831	755	443	1,716
April 2017	1,852	1,933	744	424	1,474
May 2017	1,949	2,581	817	437	1,492
June 2017	1,932	2,648	868	466	1,648
July 2017	1,959	2,161	823	439	1,588
August 2017	1,875	1,978	738	479	1,676
September 2017	1,816	1,522	862	521	1,616
October 2017	1,903	1,617	804	580	1,606
November 2017	1,880	1,583	648	511	1,601
December 2017					

## % CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS



## POUNDS CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

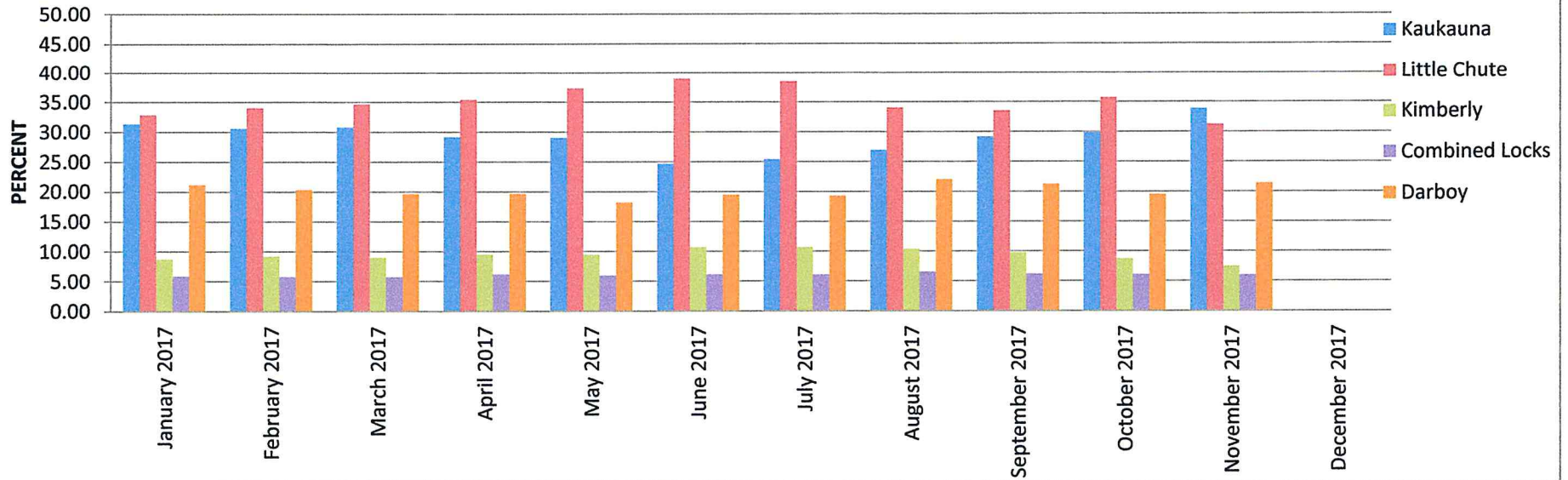
## % CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2017	31.39	32.86	8.72	5.87	21.15
February 2017	30.60	34.06	9.22	5.76	20.37
March 2017	30.84	34.69	9.03	5.75	19.69
April 2017	29.20	35.41	9.53	6.20	19.65
May 2017	29.07	37.32	9.45	5.98	18.19
June 2017	24.70	38.97	10.69	6.16	19.49
July 2017	25.39	38.52	10.69	6.10	19.30
August 2017	26.94	34.08	10.39	6.55	22.04
September 2017	29.18	33.58	9.77	6.20	21.26
October 2017	29.89	35.74	8.72	6.11	19.55
November 2017	33.86	31.24	7.45	6.02	21.42
December 2017					

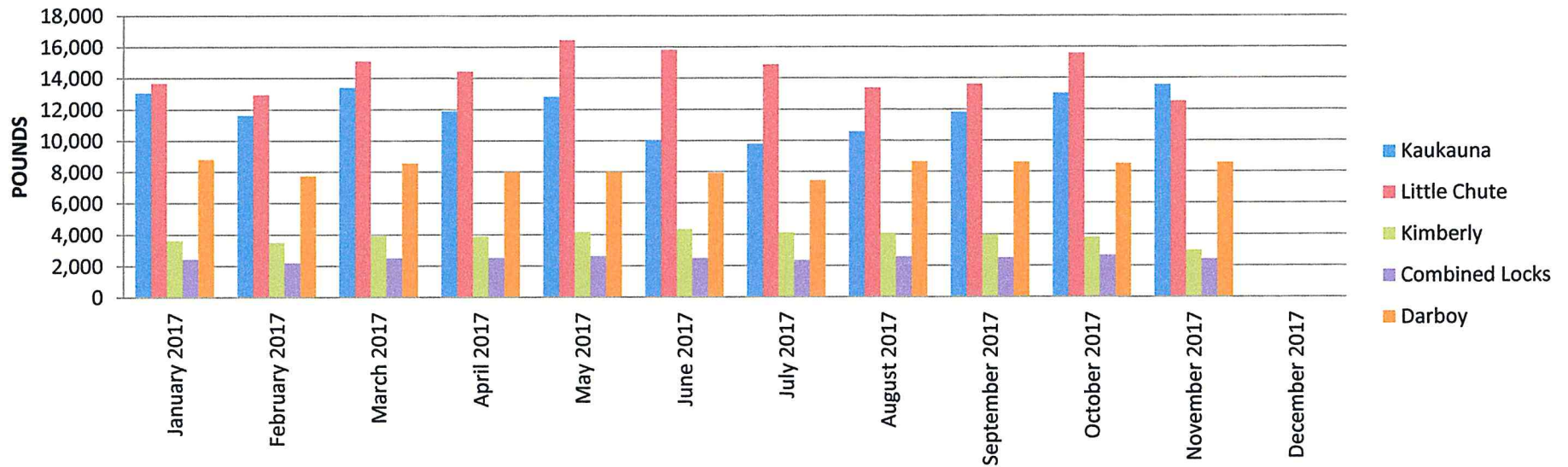
## POUNDS CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2017	13,065	13,677	3,631	2,445	8,804
February 2017	11,618	12,930	3,499	2,187	7,734
March 2017	13,413	15,083	3,926	2,501	8,563
April 2017	11,891	14,420	3,882	2,522	8,002
May 2017	12,807	16,443	4,162	2,637	8,014
June 2017	10,025	15,813	4,338	2,498	7,908
July 2017	9,795	14,858	4,124	2,354	7,446
August 2017	10,573	13,374	4,079	2,572	8,650
September 2017	11,820	13,605	3,958	2,513	8,613
October 2017	13,032	15,585	3,802	2,662	8,522
November 2017	13,561	12,509	2,985	2,412	8,578
December 2017					

## % CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS



## POUNDS CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

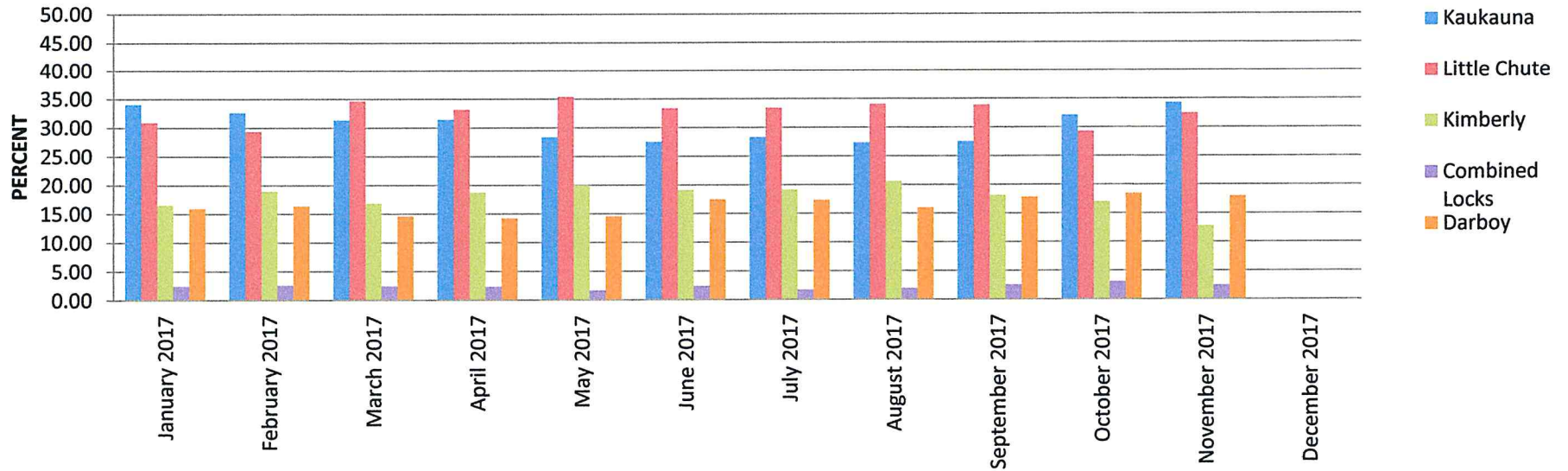
## % CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2017	34.08	30.92	16.58	2.46	15.96
February 2017	32.64	29.39	18.97	2.59	16.42
March 2017	31.34	34.66	16.90	2.45	14.64
April 2017	31.46	33.19	18.75	2.38	14.23
May 2017	28.34	35.40	20.01	1.69	14.56
June 2017	27.54	33.38	19.16	2.41	17.51
July 2017	28.30	33.42	19.20	1.74	17.35
August 2017	27.34	34.04	20.61	2.00	16.00
September 2017	27.54	33.87	18.19	2.54	17.86
October 2017	32.13	29.29	17.03	3.08	18.47
November 2017	34.28	32.46	12.81	2.48	17.97
December 2017					

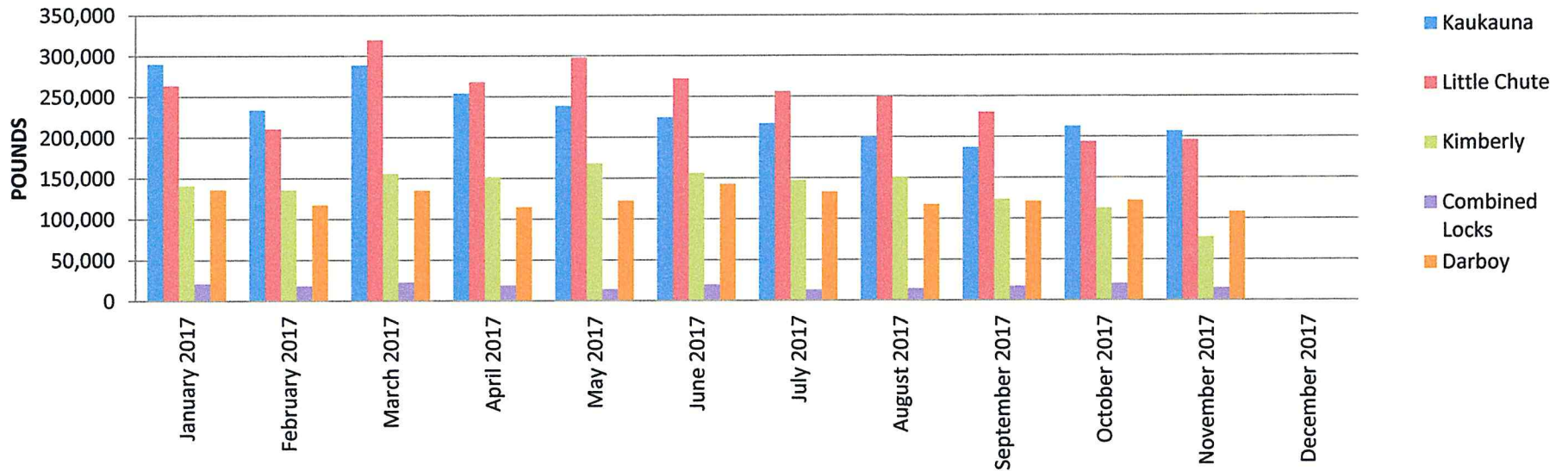
## POUNDS CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2017	290,487	263,589	141,331	20,961	136,083
February 2017	233,674	210,399	135,811	18,539	117,560
March 2017	289,153	319,766	155,878	22,631	135,093
April 2017	254,166	268,101	151,491	19,207	114,926
May 2017	238,575	297,961	168,416	14,259	122,531
June 2017	224,424	271,994	156,109	19,621	142,719
July 2017	216,902	256,125	147,157	13,326	132,988
August 2017	200,477	249,599	151,138	14,644	117,349
September 2017	187,035	229,979	123,552	17,260	121,259
October 2017	212,772	193,982	112,801	20,394	122,321
November 2017	206,844	195,901	77,321	14,953	108,438
December 2017					

## % CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS



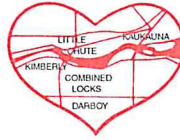
## POUNDS CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS





**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 19800  
 Green Bay, WI 54307-9004

**Attn:** Account # N2310E

**Month:** November

**Year:** 2017

## Gallons of Final Effluent Purchased (Billing)

<u>Date</u>	<u>Gallons</u>	<u>Date</u>	<u>Gallons</u>
11/1/2017	2,512,000	11/21/2017	2,333,000
11/2/2017	2,511,000	11/22/2017	2,720,000
11/3/2017	2,512,000	11/23/2017	2,718,000
11/4/2017	2,516,000	11/24/2017	2,686,000
11/5/2017	2,512,000	11/25/2017	2,706,000
11/6/2017	2,512,000	11/26/2017	2,377,000
11/7/2017	2,449,000	11/27/2017	2,305,000
11/8/2017	2,427,000	11/28/2017	2,376,000
11/9/2017	2,495,000	11/29/2017	2,421,000
11/10/2017	2,550,000	11/30/2017	2,399,000
11/11/2017	2,562,000		
11/12/2017	2,326,000		
11/13/2017	2,263,000		
11/14/2017	2,235,000		
11/15/2017	2,225,000	<b>Total:</b>	<b>65,098,000</b>
11/16/2017	2,101,000		
11/17/2017	1,015,000		
11/18/2017	334,000		
11/19/2017	0		
11/20/2017	0		

**Facility:** Wisconsin Public Service Corporation - Fox Energy Center  
P.O. Box 19800  
Green Bay, WI 54307-9004

**Attn:** Account # N2310E

## **MONTHLY BILLING**

**Month:** November

**Year:** 2017

**GALLONS PURCHASED:** 65,098,000

**BILLING RATE:** \$0.1533035 PER 1000 GALLONS

**TOTAL AMOUNT DUE: \$9,979.75**

**Heart of the Valley  
Metropolitan Sewerage District**

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

**2017**

**Final Effluent Sent to Fox Energy Facility**

**Gallons: 610,630,000**

**Charge Per 1000 Gallons: \$0.1533035 Per 1000 Gallons**

**Sale of Final Effluent (Revenue Collected): \$93,611.72**