

## FLOW AND STRENGTH PROJECTIONS

MONTH: September 2016

	<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)	122,746,817	156,665,720	33,918,903	\$ 96,969.99	\$ 123,765.92	\$ 26,795.93
B.O.D. (#s)	234,428	251,485	17,057	\$ 59,544.71	\$ 63,877.19	\$ 4,332.48
S. SOLIDS (#s)	338,478	320,407	-18,071	\$ 74,126.68	\$ 70,169.13	\$ (3,957.55)
PHOSPHORUS (#s)	6,742	6,880	138	\$ 38,577.72	\$ 39,367.36	\$ 789.64
AMMONIA-N (#s)	29,826	43,318	13,492	\$ 50,584.90	\$ 73,467.33	\$ 22,882.43
CHLORIDES (#s)	503,928	666,295	162,367	\$ 2,519.64	\$ 3,331.48	\$ 811.84
			<b>TOTAL:</b>	\$ 322,323.64	\$ 373,978.40	\$ 51,654.77

(THRU SEPTEMBER 2016)

PROJECTED FOR 2016

	<u>END OF YEAR PROJECTED</u>	<u>YEAR TO DATE SURPLUS/ DEFICIT</u>	<u>YEAR TO DATE SURPLUS/ DEFICIT \$\$</u>
FLOW (GALLONS)	1,924,757,830	46,019,673	\$ 36,355.54
B.O.D. (#s)	3,352,026	18,193	\$ 4,621.01
S. SOLIDS (#s)	4,647,790	-765,355	\$ (167,612.78)
PHOSPHORUS (#s)	90,738	-5,912	\$ (33,829.49)
AMMONIA-N (#s)	402,396	81,217	\$ 137,744.08
CHLORIDES (#s)	7,179,135	1,033,784	\$ 5,168.92
		<b>TOTAL:</b>	\$ (17,552.71)

# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

MONTH: SEPTEMBER 2016

## HYDRAULIC AND ORGANIC LOADINGS DATA

### INFLUENT

TOTAL FLOW TO PLANT: 155,337,000 GALLONS  
 AVERAGE B.O.D. : 174 mg/L  
 AVERAGE SUSPENDED SOLIDS : 218 mg/L  
 AVERAGE PHOSPHORUS : 5.18 mg/L  
 AVERAGE AMMONIA-N : 34.94 mg/L  
 AVERAGE CHLORIDES : 575.71 mg/L

MAXIMUM DAILY FLOW TO PLANT:  
8,438,000

### 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	36.77	26.21	27.19	28.91	29.76	30.21
LITTLE CHUTE	26.64	30.57	31.20	28.23	36.15	33.96
KIMBERLY	14.84	14.92	13.78	13.58	10.13	19.97
COMBINED LOCKS	5.61	5.96	5.87	6.45	6.04	1.64
DARBOY	16.14	22.34	21.97	22.83	17.92	14.23

### AVERAGE DAILY INFLUENT LOADINGS

FLOW : 5,177,900 GALLONS  
 B.O.D. : 7,517 POUNDS  
 SUSPENDED SOLIDS : 9,397 POUNDS  
 PHOSPHORUS : 224 POUNDS  
 AMMONIA-N : 1,509 POUNDS  
 CHLORIDES : 24,861 POUNDS

%
43.5
51.3
57.7
54.9
78.6

### 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

cB.O.D. : 5.06 mg/L  
 SUSPENDED SOLIDS : 25.49 mg/L  
 PHOSPHORUS : 0.53 mg/L  
 AMMONIA-N : 0.42 mg/L  
 CHLORIDES : 562.14 mg/L

### MONTHLY AVERAGE

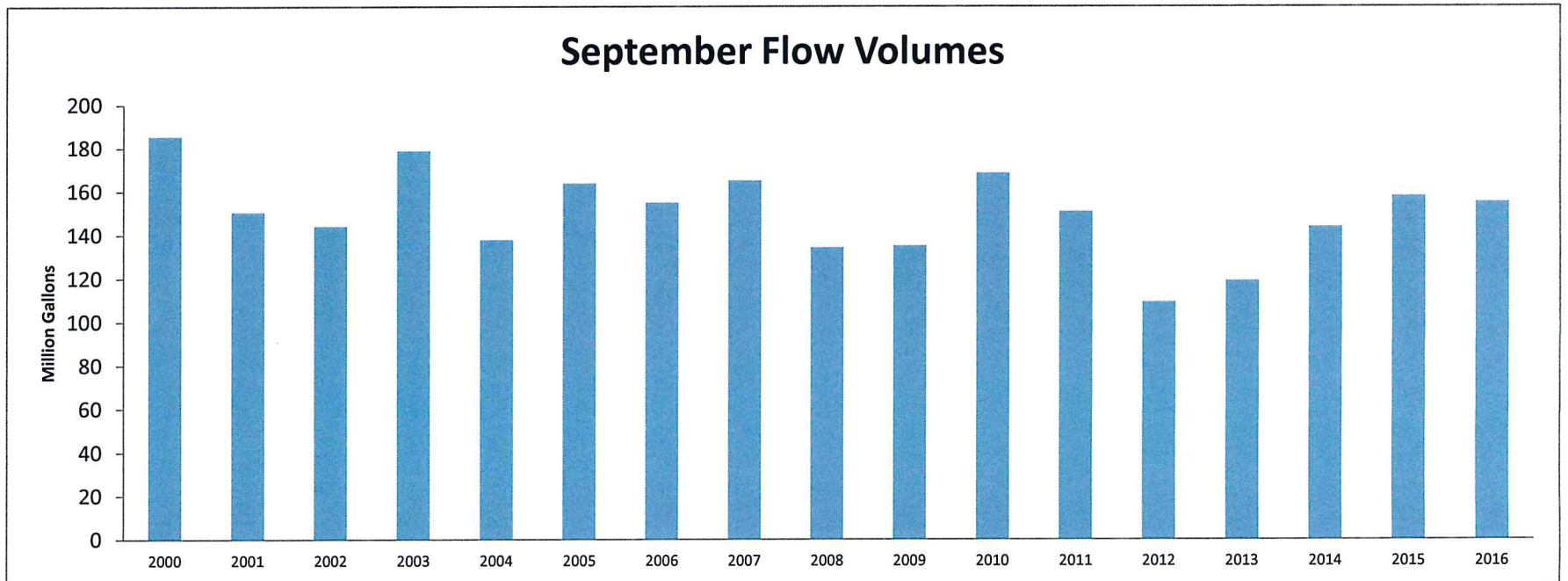
%
20.2
85.0
53.2

### PERMIT LIMIT

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

# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

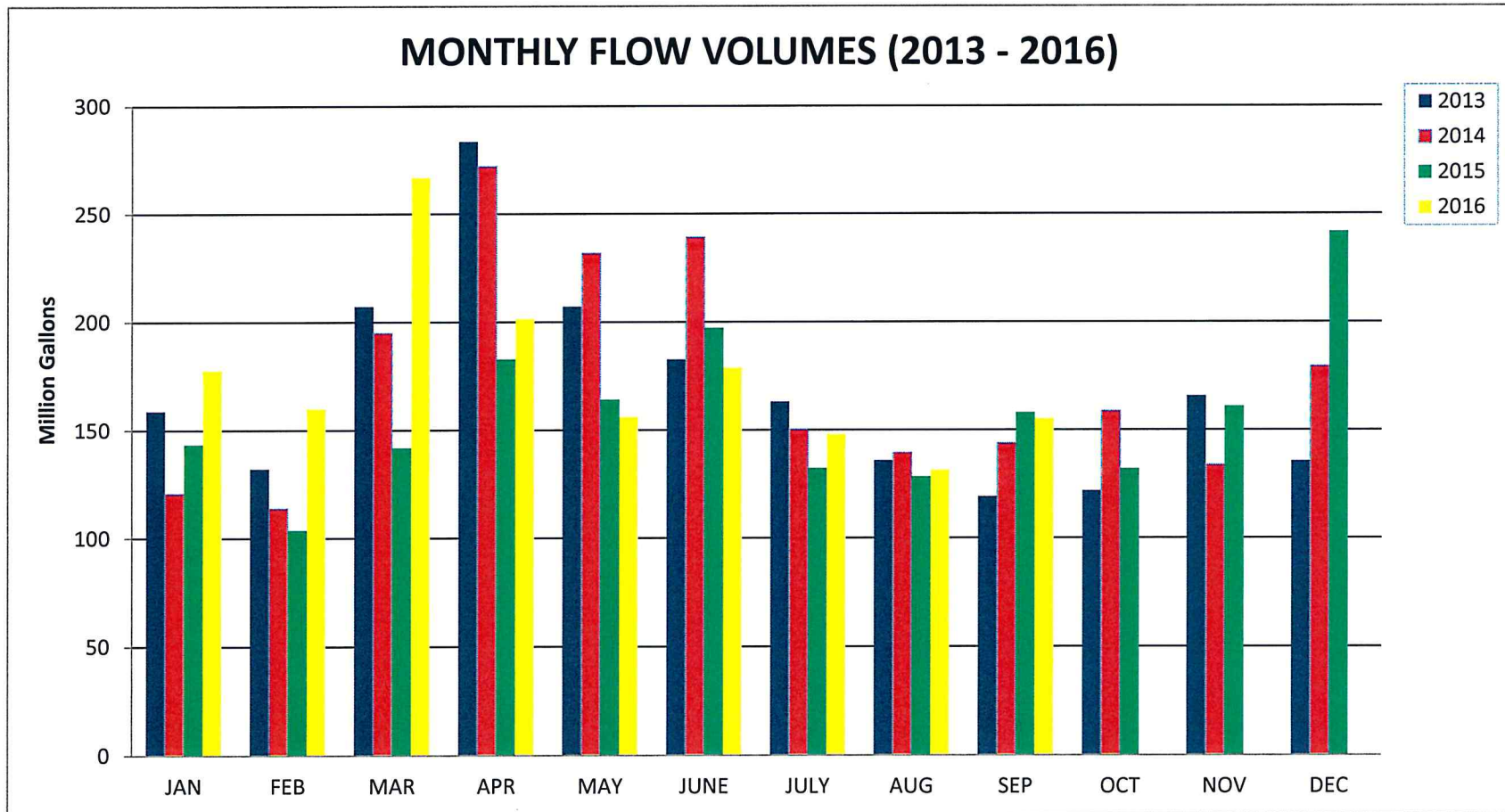
<u>Year</u>	<u>September Flow Million Gallons</u>	<u>Precipitation Inches</u>
2000	185.548	5.05
2001	150.657	2.05
2002	144.243	2.18
2003	178.962	4.00
2004	137.948	0.46
2005	163.963	2.48
2006	155.040	2.51
2007	165.134	2.31
2008	134.409	1.46
2009	135.151	1.50
2010	168.575	2.99
2011	151.079	3.86
2012	109.316	0.72
2013	119.210	2.31
2014	143.973	2.74
2015	158.179	5.17
2016	155.377	4.57



# 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>2013</b>	159.014	132.251	207.339	283.615	207.246	182.739	163.201	135.948	119.210	122.015	165.861	135.674
<b>2014</b>	120.943	114.081	195.096	272.038	231.951	239.160	150.335	139.604	143.973	158.887	133.835	179.535
<b>2015</b>	143.460	103.918	141.868	182.911	164.246	197.337	132.478	128.427	158.179	132.217	161.094	241.853
<b>2016</b>	177.906	160.230	266.917	201.541	156.148	178.887	147.968	131.529	155.337			

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



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

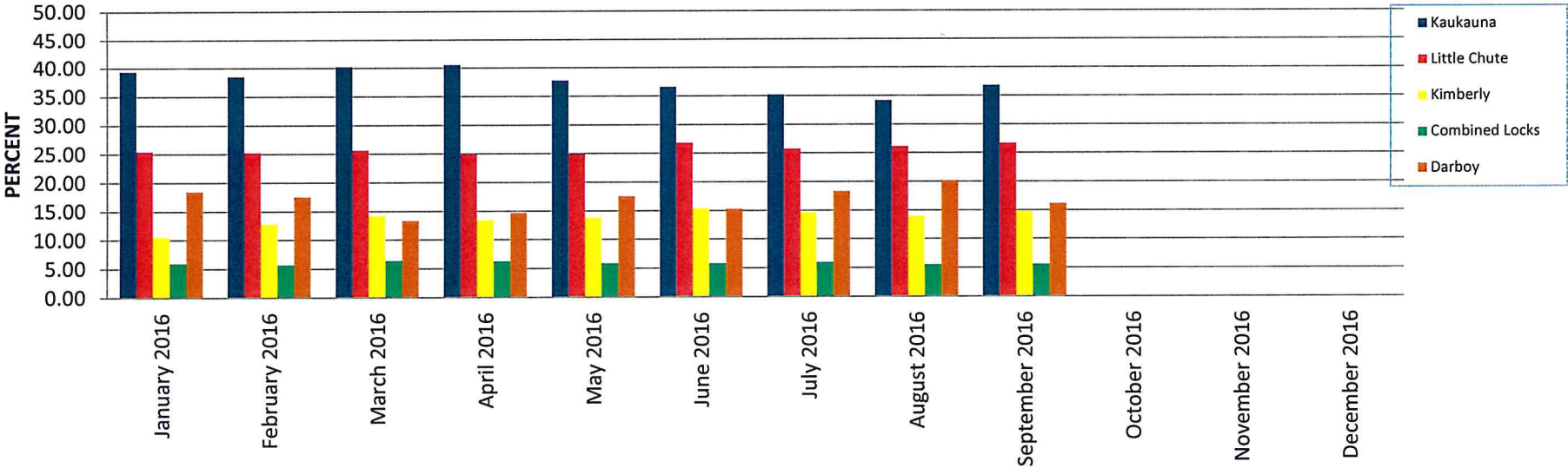
## % CONTRIBUTION BY COMMUNITY - FLOW GALLONS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>	<u>Rainfall - Inches</u>
January 2016	39.42	25.45	10.65	6.00	18.48	1.53
February 2016	38.50	25.23	12.94	5.76	17.56	1.13
March 2016	40.24	25.63	14.31	6.46	13.37	2.82
April 2016	40.57	24.95	13.49	6.28	14.71	0.89
May 2016	37.78	24.88	13.91	5.89	17.54	2.52
June 2016	36.58	26.77	15.50	5.87	15.29	5.19
July 2016	35.19	25.71	14.73	6.02	18.35	2.36
August 2016	34.19	26.09	14.01	5.57	20.14	2.74
September 2016	36.77	26.64	14.84	5.61	16.14	4.57
October 2016						
November 2016						
December 2016						

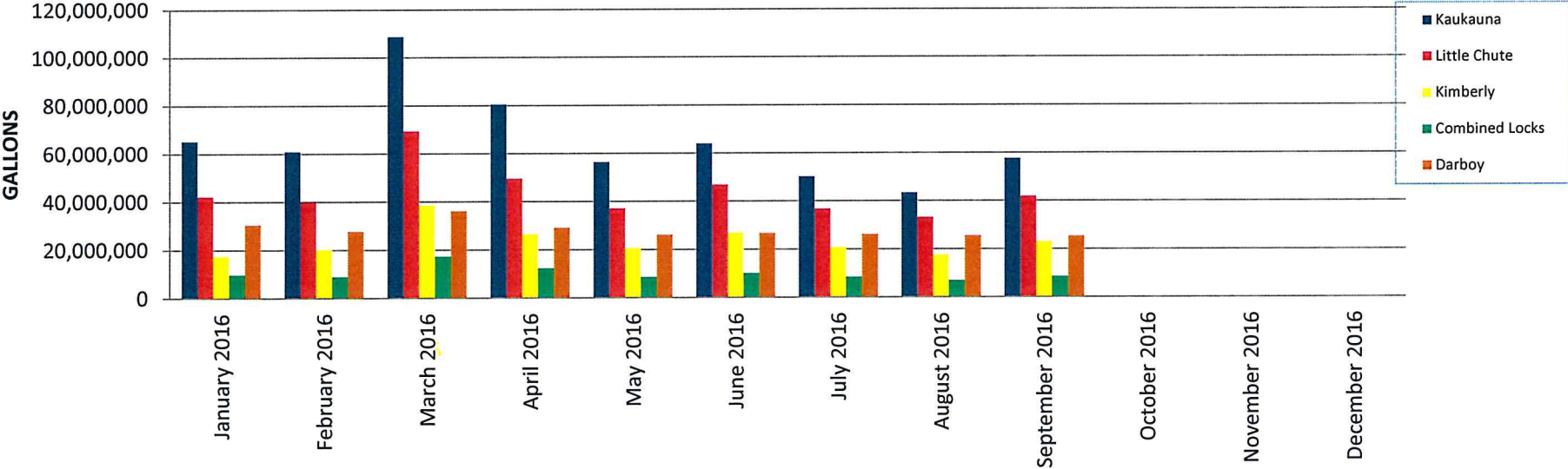
## GALLONS CONTRIBUTION BY COMMUNITY - FLOW GALLONS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2016	65,220,640	42,115,000	17,613,000	9,929,000	30,576,000
February 2016	60,936,840	39,936,000	20,481,000	9,116,000	27,791,000
March 2016	108,697,400	69,221,000	38,650,000	17,438,000	36,111,000
April 2016	80,370,220	49,428,000	26,732,000	12,434,000	29,144,000
May 2016	56,311,180	37,087,000	20,740,000	8,781,000	26,146,000
June 2016	63,887,260	46,745,000	27,065,000	10,245,000	26,706,000
July 2016	50,158,000	36,637,000	20,991,000	8,586,000	26,156,000
August 2016	43,369,600	33,105,000	17,774,000	7,068,000	25,550,000
September 2016	57,603,720	41,737,000	23,251,000	8,782,000	25,292,000
October 2016					
November 2016					
December 2016					

### FLOW PERCENT CONTRIBUTED BY COMMUNITY



### FLOW GALLONS CONTRIBUTED BY COMMUNITY



# 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 2016	31.61	25.94	11.56	6.56	24.32
February 2016	26.78	28.46	16.25	7.27	21.24
March 2016	26.94	30.84	15.58	6.45	20.20
April 2016	27.58	28.12	14.93	6.38	22.99
May 2016	27.00	27.66	13.83	7.73	23.78
June 2016	25.43	33.95	15.28	5.92	19.41
July 2016	23.42	30.74	16.02	6.82	23.00
August 2016	24.18	29.21	16.19	5.91	24.51
September 2016	26.21	30.57	14.92	5.96	22.34
October 2016					
November 2016					
December 2016					

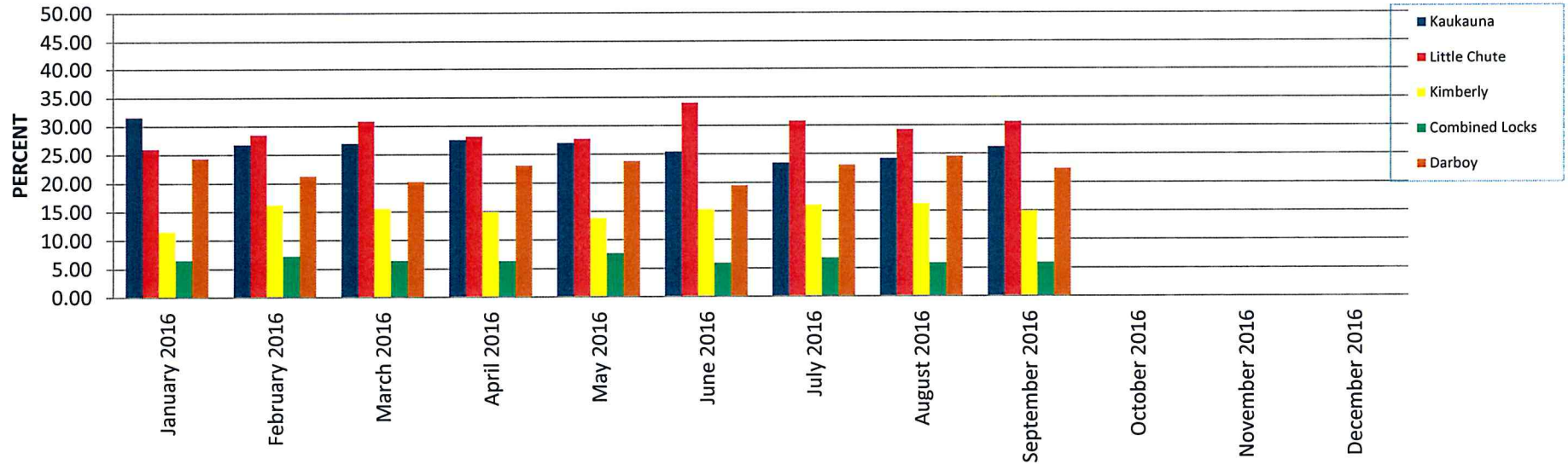
JUNE 2016 - LITTLE CHUTE TOTAL B.O.D. HIGH DUE TO REPAIR PROJECT AT AGROPUR CHEESE FACILITY

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

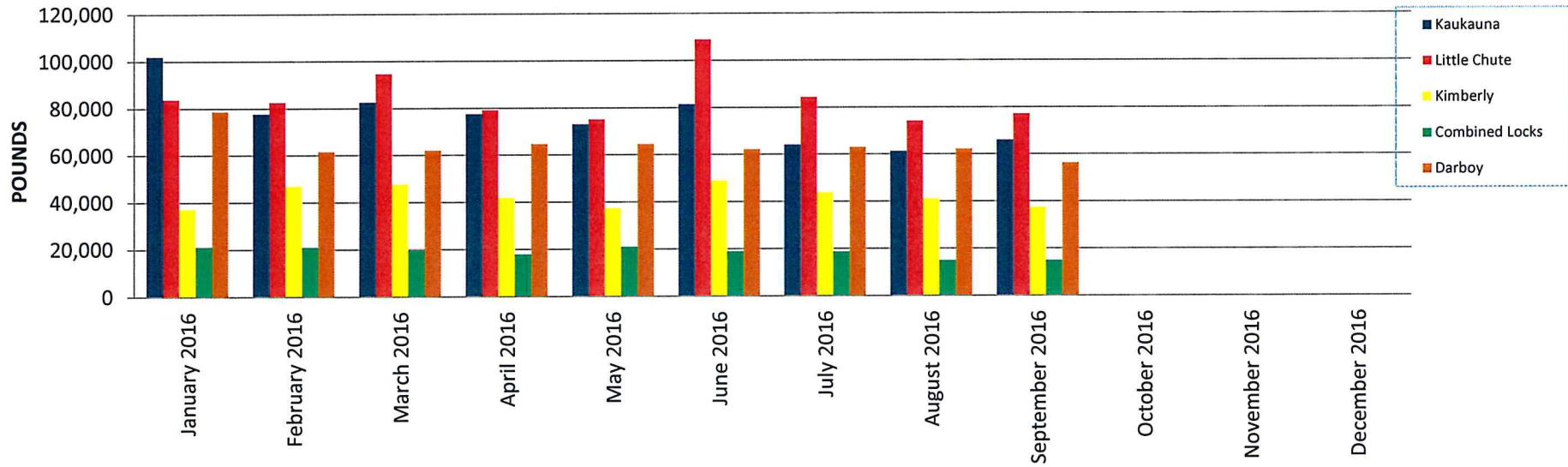
	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2016	102,026	83,715	37,314	21,186	78,503
February 2016	77,616	82,483	47,098	21,080	61,548
March 2016	82,595	94,529	47,752	19,761	61,926
April 2016	77,474	78,994	41,949	17,914	64,593
May 2016	73,097	74,894	37,441	20,928	64,393
June 2016	81,440	108,725	48,942	18,970	62,148
July 2016	64,127	84,156	43,859	18,672	62,968
August 2016	61,307	74,044	41,046	14,975	62,135
September 2016	65,925	76,878	37,518	14,989	56,176
October 2016					
November 2016					
December 2016					



## B.O.D. PERCENT CONTRIBUTED BY COMMUNITY



## B.O.D. POUNDS CONTRIBUTED BY COMMUNITY





# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

## % CONTRIBUTION BY COMMUNITY -TOTAL SUSPENDED SOLIDS POUNDS

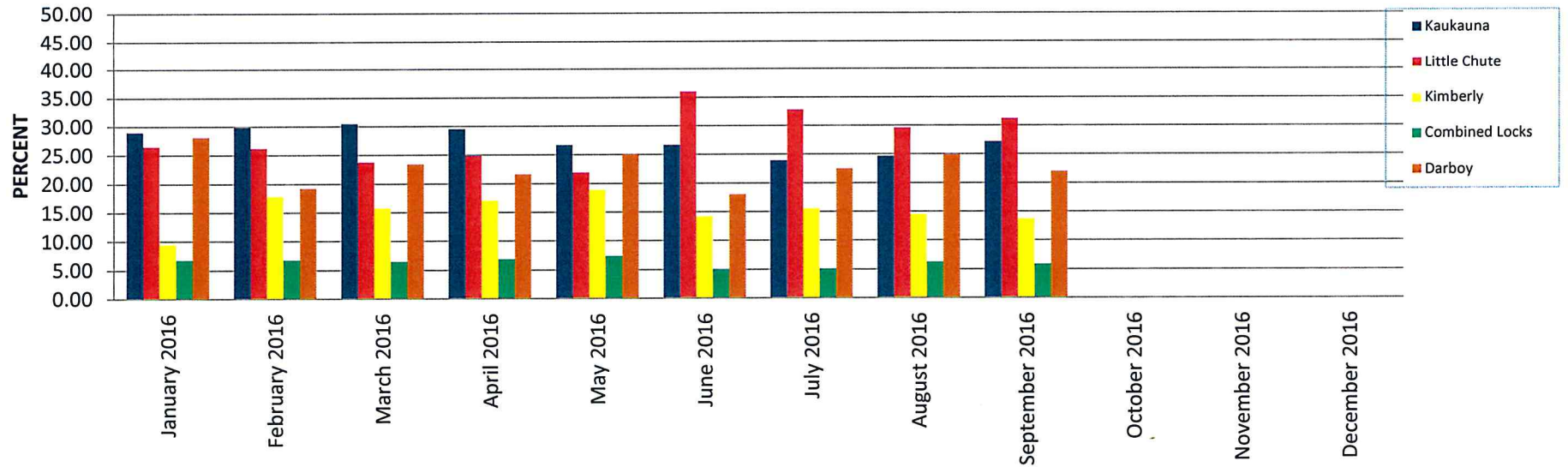
	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2016	29.01	26.50	9.55	6.78	28.16
February 2016	29.88	26.17	17.94	6.81	19.20
March 2016	30.50	23.75	15.83	6.52	23.40
April 2016	29.53	24.86	17.12	6.90	21.60
May 2016	26.73	21.90	18.92	7.41	25.05
June 2016	26.67	35.99	14.25	5.05	18.04
July 2016	23.93	32.79	15.66	5.14	22.48
August 2016	24.67	29.57	14.55	6.29	24.93
September 2016	27.19	31.20	13.78	5.87	21.97
October 2016					
November 2016					
December 2016					

JUNE 2016 - LITTLE CHUTE TOTAL SOLIDS HIGH DUE TO REPAIR PROJECT AT AGROPUR CHEESE FACILITY

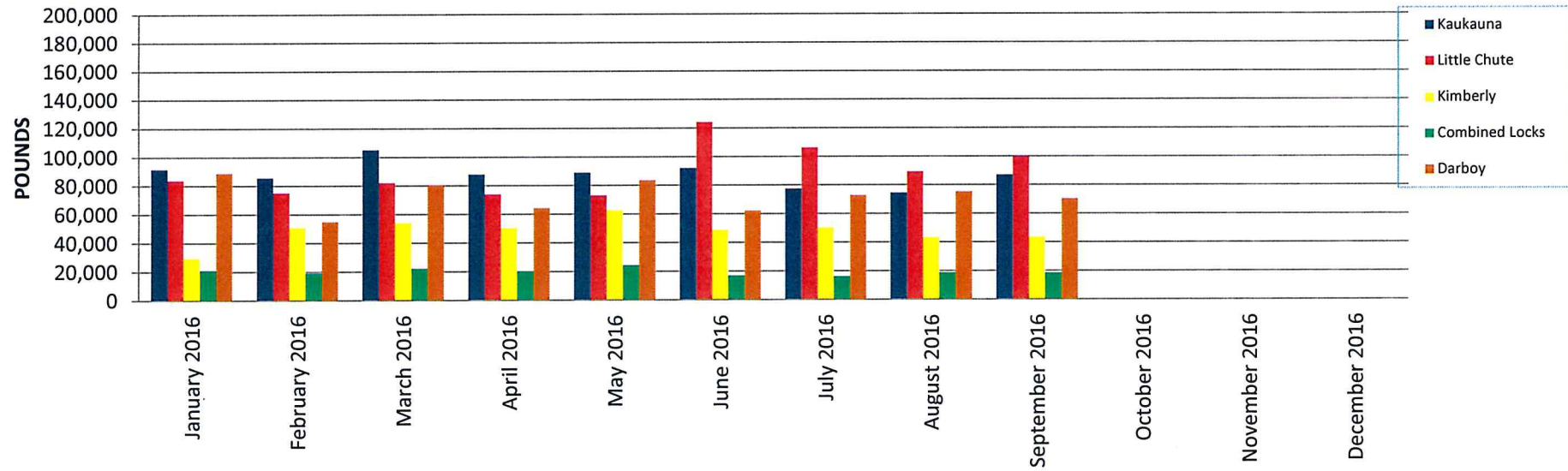
## POUNDS CONTRIBUTION BY COMMUNITY - TOTAL SUSPENDED SOLIDS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2016	91,773	83,828	30,192	21,454	89,055
February 2016	85,783	75,143	51,491	19,546	55,121
March 2016	105,329	82,029	54,650	22,509	80,806
April 2016	88,067	74,142	51,054	20,567	64,411
May 2016	89,272	73,149	63,194	24,735	83,671
June 2016	92,027	124,215	49,173	17,415	62,262
July 2016	77,542	106,254	50,757	16,653	72,829
August 2016	74,589	89,387	43,973	19,014	75,353
September 2016	87,122	99,956	44,140	18,803	70,385
October 2016					
November 2016					
December 2016					

## TSS PERCENT CONTRIBUTED BY COMMUNITY



## TSS POUNDS CONTRIBUTED BY COMMUNITY



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

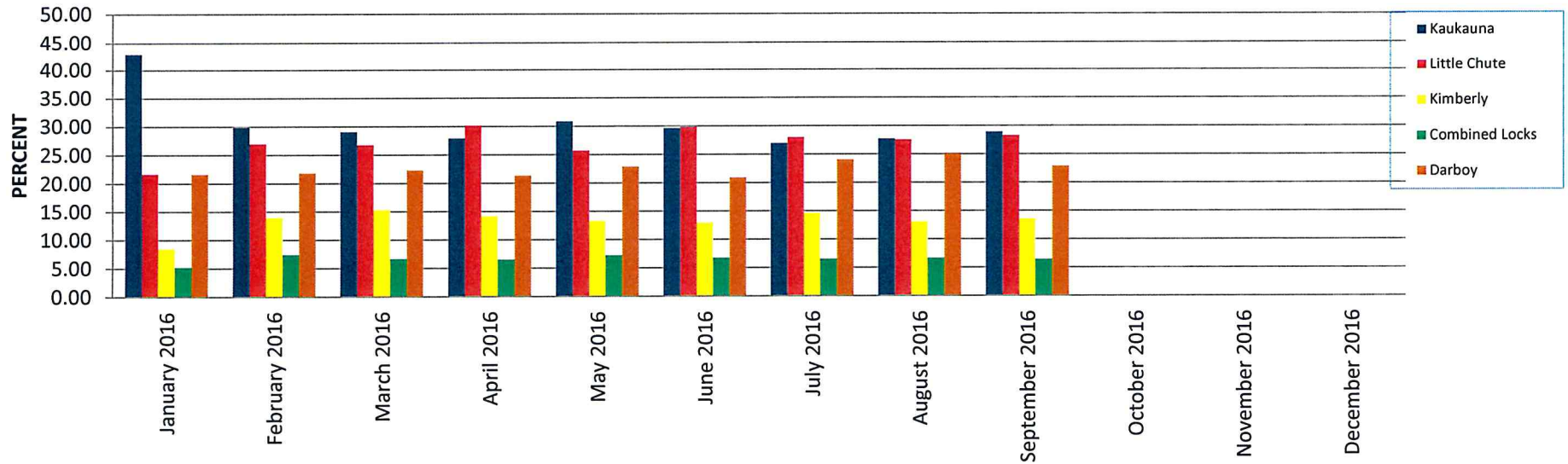
## % CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2016	42.93	21.63	8.59	5.26	21.59
February 2016	29.87	26.92	13.99	7.44	21.77
March 2016	29.03	26.72	15.32	6.69	22.24
April 2016	27.89	30.08	14.18	6.54	21.31
May 2016	30.84	25.68	13.32	7.29	22.86
June 2016	29.59	29.78	13.01	6.77	20.85
July 2016	26.91	27.93	14.62	6.54	24.00
August 2016	27.68	27.51	13.06	6.68	25.07
September 2016	28.91	28.23	13.58	6.45	22.83
October 2016					
November 2016					
December 2016					

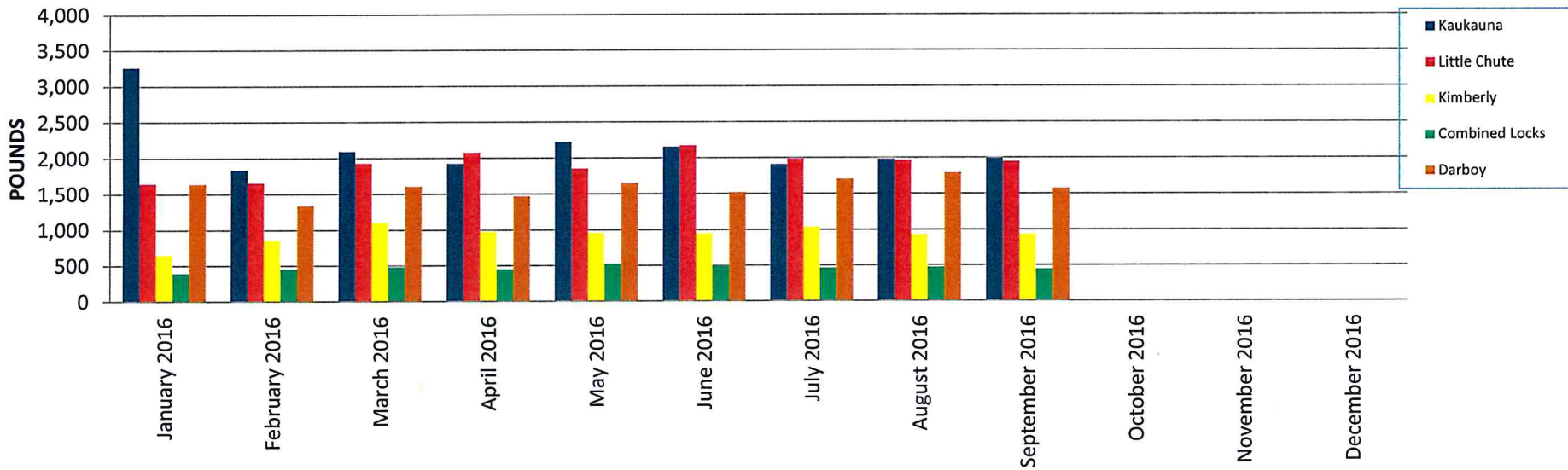
## POUNDS CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2016	3,265	1,645	654	400	1,642
February 2016	1,838	1,656	861	458	1,340
March 2016	2,096	1,929	1,106	483	1,605
April 2016	1,925	2,075	979	451	1,471
May 2016	2,226	1,853	961	526	1,650
June 2016	2,157	2,170	948	494	1,520
July 2016	1,910	1,982	1,037	464	1,703
August 2016	1,977	1,962	931	476	1,788
September 2016	1,989	1,942	934	444	1,571
October 2016					
November 2016					
December 2016					

## PHOSPHORUS PERCENT CONTRIBUTED BY COMMUNITY



## PHOSPHORUS POUNDS CONTRIBUTED BY COMMUNITY



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

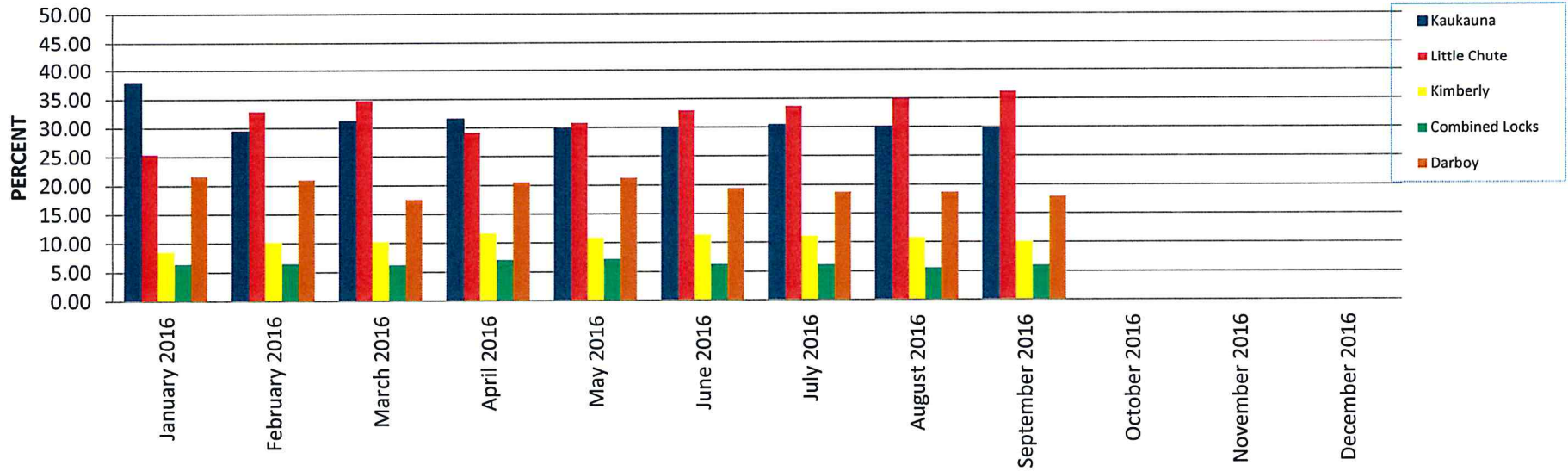
## % CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2016	37.92	25.36	8.64	6.45	21.63
February 2016	29.38	32.85	10.30	6.49	20.98
March 2016	31.18	34.70	10.34	6.25	17.53
April 2016	31.55	29.10	11.75	7.10	20.50
May 2016	29.83	30.76	10.95	7.24	21.22
June 2016	29.99	32.90	11.42	6.27	19.43
July 2016	30.36	33.60	11.16	6.18	18.70
August 2016	30.02	34.90	10.85	5.58	18.66
September 2016	29.76	36.15	10.13	6.04	17.92
October 2016					
November 2016					
December 2016					

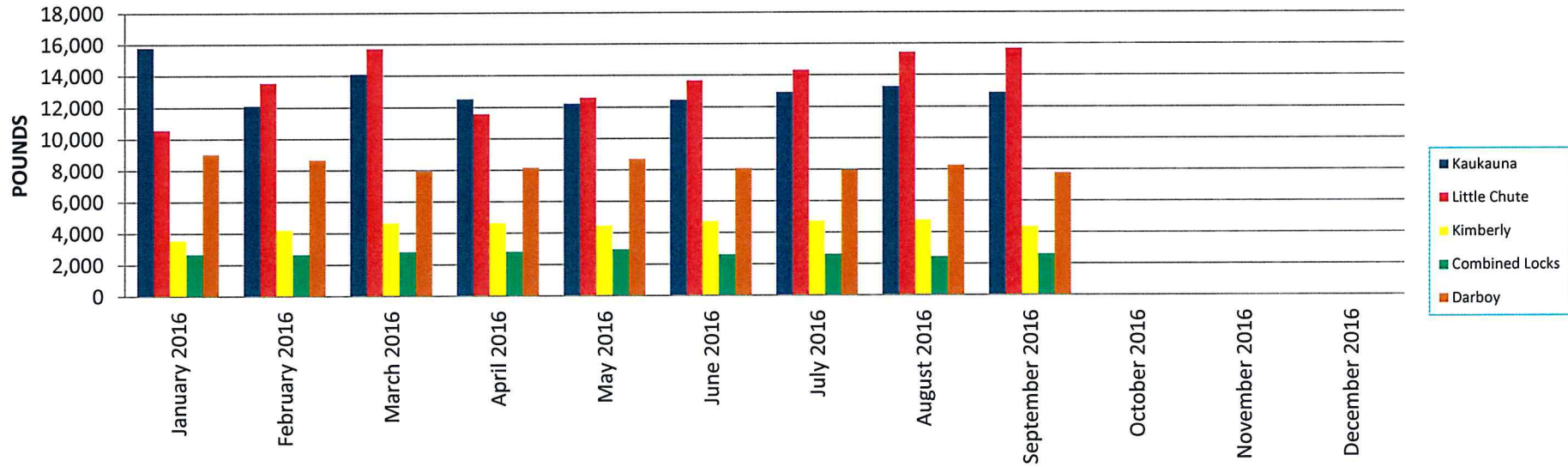
## POUNDS CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2016	15,793	10,560	3,597	2,685	9,009
February 2016	12,105	13,533	4,241	2,674	8,643
March 2016	14,101	15,694	4,677	2,827	7,927
April 2016	12,525	11,552	4,666	2,819	8,138
May 2016	12,213	12,593	4,483	2,963	8,687
June 2016	12,451	13,660	4,741	2,605	8,067
July 2016	12,919	14,297	4,748	2,627	7,956
August 2016	13,268	15,425	4,793	2,464	8,246
September 2016	12,891	15,661	4,388	2,616	7,763
October 2016					
November 2016					
December 2016					

## AMMONIA PERCENT CONTRIBUTED BY COMMUNITY



## AMMONIA POUNDS CONTRIBUTED BY COMMUNITY





# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

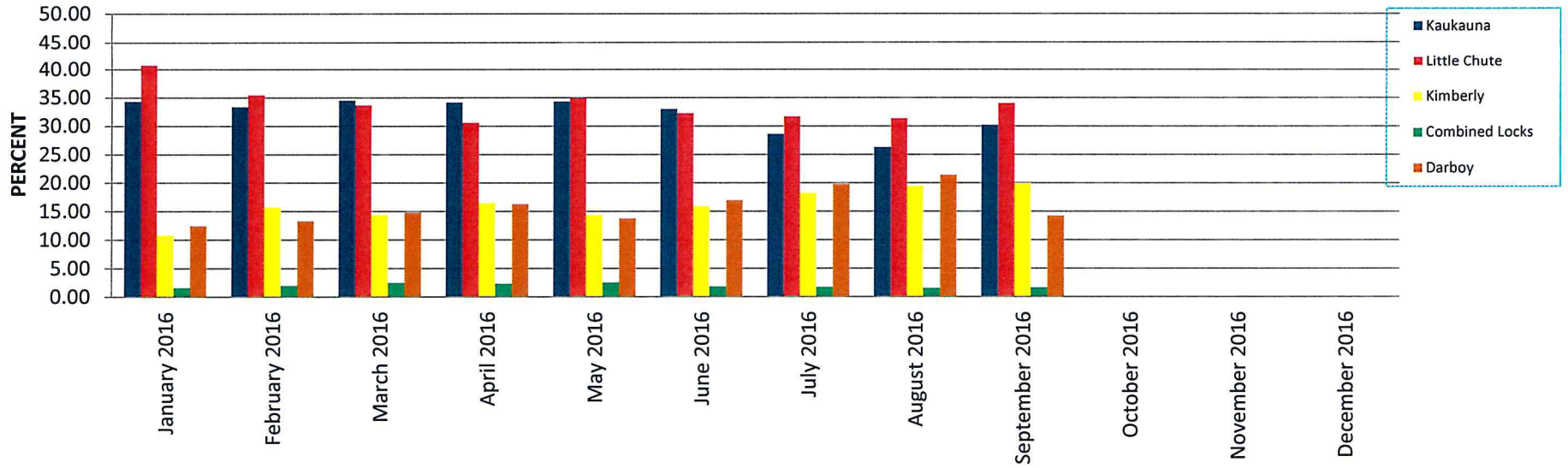
## % CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2016	34.32	40.69	10.91	1.64	12.44
February 2016	33.35	35.43	15.88	2.04	13.31
March 2016	34.50	33.63	14.54	2.50	14.83
April 2016	34.17	30.56	16.60	2.37	16.29
May 2016	34.34	34.88	14.49	2.55	13.74
June 2016	32.96	32.20	16.00	1.86	16.97
July 2016	28.58	31.61	18.32	1.74	19.75
August 2016	26.29	31.27	19.50	1.53	21.41
September 2016	30.21	33.96	19.97	1.64	14.23
October 2016					
November 2016					
December 2016					

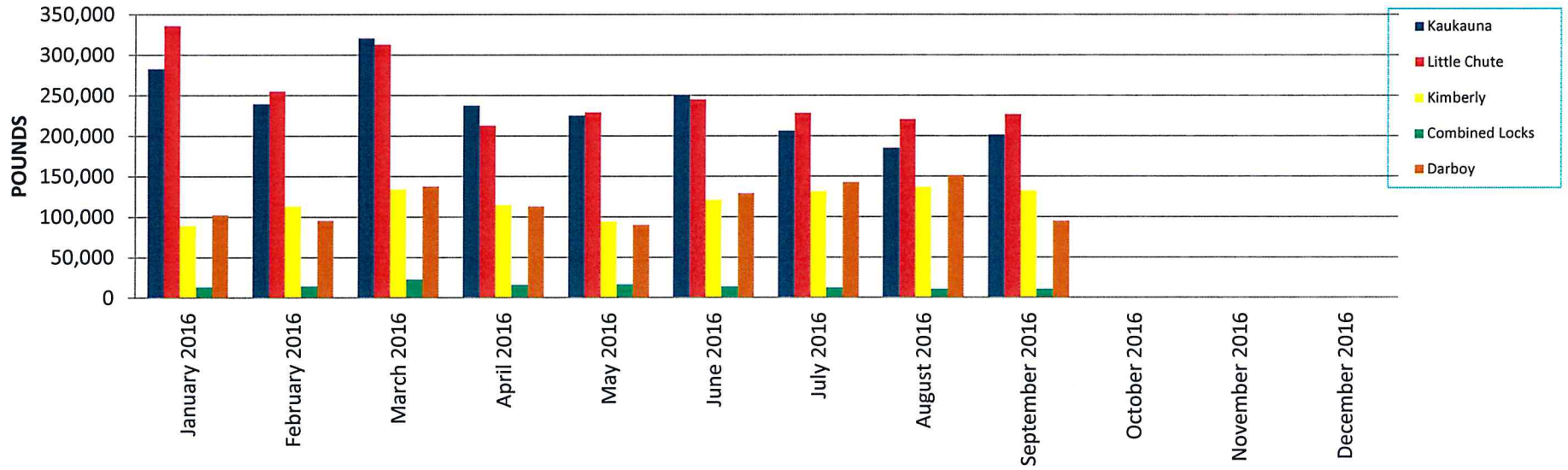
## POUNDS CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2016	283,016	335,506	89,944	13,504	102,591
February 2016	239,748	254,722	114,133	14,653	95,661
March 2016	320,719	312,610	135,135	23,269	137,841
April 2016	237,464	212,422	115,374	16,506	113,225
May 2016	225,105	228,643	94,960	16,701	90,088
June 2016	250,500	244,729	121,611	14,142	128,943
July 2016	206,378	228,240	132,266	12,578	142,608
August 2016	185,275	220,352	137,424	10,809	150,868
September 2016	201,261	226,253	133,055	10,915	94,812
October 2016					
November 2016					
December 2016					

## CHLORIDE PERCENT CONTRIBUTED BY COMMUNITY



## CHLORIDE POUNDS CONTRIBUTED BY COMMUNITY

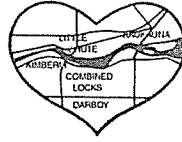


**DISTRICT MANAGER:**

Glen H. Geurts

**SERVING:**

Combined Locks  
 Kaukauna  
 Kimberly  
 Little Chute  
 Darboy S.D.

**COMMISSIONERS:**

David J. Casper, President  
 Stephen D. Giebel, Vice-Pres.  
 Bruce M. Siebers, Secretary  
 Kevin P. Coffey  
 Patrick E. Hennessey

**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:** September**Year:** 2016**Gallons of Final Effluent Purchased (Billing)**

<u>Date</u>	<u>Gallons</u>	<u>Date</u>	<u>Gallons</u>
9/1/2016	3,131,000	9/21/2016	3,258,000
9/2/2016	3,085,000	9/22/2016	3,018,000
9/3/2016	2,929,000	9/23/2016	2,535,000
9/4/2016	1,968,000	9/24/2016	1,776,000
9/5/2016	2,506,000	9/25/2016	1,675,000
9/6/2016	3,524,000	9/26/2016	1,031,000
9/7/2016	3,027,000	9/27/2016	377,000
9/8/2016	3,087,000	9/28/2016	0
9/9/2016	3,044,000	9/29/2016	0
9/10/2016	2,275,000	9/30/2016	0
9/11/2016	2,016,000		
9/12/2016	3,091,000		
9/13/2016	3,241,000		
9/14/2016	3,114,000		
9/15/2016	2,565,000		
9/16/2016	2,073,000		
9/17/2016	2,492,000		
9/18/2016	2,670,000		
9/19/2016	3,227,000		
9/20/2016	3,254,000		
		<b>Total:</b>	<b>69,989,000</b>

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

**Attn:** Account # N2310E

## **MONTHLY BILLING**

**Month:** September

**Year:** 2016

**GALLONS PURCHASED:** 69,989,000

**BILLING RATE:** \$0.1552173 PER 1000 GALLONS

**TOTAL AMOUNT DUE: \$10,863.50**

**Heart of the Valley  
Metropolitan Sewerage District**

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

**2016**

**Final Effluent Sent to Fox Energy Facility**

**Gallons: 600,075,000**

**Charge Per 1000 Gallons: \$0.1552173 Per 1000 Gallons**

**Sale of Final Effluent (Revenue Collected): \$93,142.02**