

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: HEART OF THE VALLEY MSD WW TRTMNT FAC
 Contact Address: 801 Thilmany Rd
 Kaukauna, WI 54130
 Facility Contact: Brian Helminger, District Director
 Phone Number: (920) 766-5731
 Reporting Period: 09/01/2017 - 09/30/2017
 Form Due Date: 10/21/2017
 Permit Number: 0031232

Date Received:
 DOC: 385028
 FIN: 6375
 FID: 445005220
 Region: Northeast Region
 Permit Drafter: Richard P Sachs
 Reviewer: Mark K. Corbett
 Office: Oshkosh

	Sample Point	001	701	701	701	701
	Description	Effluent	Influent	Influent	Influent	Influent
	Parameter	211	211	66	457	87
	Description	Flow Rate	Flow Rate	BOD5, Total	Suspended Solids, Total	Cadmium, Total Recoverable
	Units	MGD	MGD	mg/L	mg/L	ug/L
	Sample Type	CONTINUOUS	CONTINUOUS	24 HR FLOW PROP	24 HR FLOW PROP	24 HR FLOW PROP
	Frequency	DAILY	DAILY	5/WEEK	5/WEEK	MONTHLY
Sample Results	Day 1	2.585	4.243	233	172	
	2	2.848	4.769	202	192	
	3	1.696	4.128	113	176	
	4	2.084	4.766	249	220	
	5	3.113	4.450	145	112	<1.3
	6	2.522	4.490	203	220	
	7	2.638	4.560	134	100	
	8	1.777	4.250	222	208	
	9	1.432	4.100	188	224	
	10	2.351	4.470	244	176	
	11	2.347	4.528	235	220	
	12	1.163	4.155	189	252	
	13	1.014	4.002	248	248	
	14	1.101	4.237	239	252	
	15	0.207	3.644	258	256	
	16	0.306	3.672	270	340	
	17	0.611	3.953	264	200	
	18	1.202	4.023	236	268	
	19	0.838	3.885	290	220	
	20	2.795	5.940	218	184	
	21	2.618	5.646	205	156	
	22	2.027	4.778	173	124	
	23	1.714	4.309	196	300	
	24	1.983	4.578	204	164	
	25	1.610	4.490	206	212	
	26	2.644	4.110	247	200	
	27	2.992	4.199	261	244	
	28	4.158	4.259	231	196	
	29	4.052	4.052	297	256	
	30	3.915	3.915	237	180	
	31					

	Sample Point	001	701	701	701	701
	Description	Effluent	Influent	Influent	Influent	Influent
	Parameter	211	211	66	457	87
	Description	Flow Rate	Flow Rate	BOD5, Total	Suspended Solids, Total	Cadmium, Total Recoverable
	Units	MGD	MGD	mg/L	mg/L	ug/L
Summary Values	Monthly Avg	2.0781	4.353366667	221.233333333	209.066666667	0
	Daily Max	4.158	5.94	297	340	<1.3
	Daily Max - Variable					
	Daily Min	0.207	3.644	113	100	<1.3
	Geometric Mean -					
	Week 1 Avg					
	Week 2 Avg					
	Week 3 Avg					
	Week 4 Avg					
Limit(s) in Effect	Monthly Avg					
	Daily Max					
	Daily Max - Variable					
	Daily Min					
	Geometric Mean -					
	Weekly Avg					
QA/QC Information	LOD					1.3
	LOQ					5
	QC Exceedance	N	N	Y	N	N
	Lab Certification			445005220	445005220	405132750

	Sample Point	701	701	701	701	701
	Description	Influent	Influent	Influent	Influent	Influent
	Parameter	133	147	264	315	553
	Description	Chromium, Total Recoverable	Copper, Total Recoverable	Lead, Total Recoverable	Nickel, Total Recoverable	Zinc, Total Recoverable
	Units	ug/L	ug/L	ug/L	ug/L	ug/L
	Sample Type	24 HR FLOW PROP	24 HR FLOW PROP	24 HR FLOW PROP	24 HR FLOW PROP	24 HR FLOW PROP
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1					
	2					
	3					
	4					
	5	5.3	60.7	<4.3	4.7	75.3
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21					
	22					
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					
	31					

	Sample Point	701	701	701	701	701
	Description	Influent	Influent	Influent	Influent	Influent
	Parameter	133	147	264	315	553
	Description	Chromium, Total Recoverable	Copper, Total Recoverable	Lead, Total Recoverable	Nickel, Total Recoverable	Zinc, Total Recoverable
	Units	ug/L	ug/L	ug/L	ug/L	ug/L
Summary Values	Monthly Avg	5.3	60.7	0	4.7	75.3
	Daily Max	5.3	60.7	<4.3	4.7	75.3
	Daily Max - Variable					
	Daily Min	5.3	60.7	<4.3	4.7	75.3
	Geometric Mean -					
	Week 1 Avg					
	Week 2 Avg					
	Week 3 Avg					
	Week 4 Avg					
Limit(s) in Effect	Monthly Avg					
	Daily Max					
	Daily Max - Variable					
	Daily Min					
	Geometric Mean -					
	Weekly Avg					
QA/QC Information	LOD	2.5	6.3	4.3	1.4	9.3
	LOQ	10	20	13	10	40
	QC Exceedance	N	N	N	N	N
	Lab Certification	405132750	405132750	405132750	405132750	405132750

	Sample Point	001	001	001	001	001
	Description	Effluent	Effluent	Effluent	Effluent	Effluent
	Parameter	649	457	377	204	112
	Description	CBOD5	Suspended Solids, Total	pH Field	Fecal Coliform	Chlorine, Total Residual
	Units	mg/L	mg/L	su	#/100ml	ug/L
	Sample Type	24 HR FLOW PROP	24 HR FLOW PROP	GRAB	GRAB	GRAB
	Frequency	DAILY	5/WEEK	5/WEEK	WEEKLY	5/WEEK
Sample Results	Day 1	6	46	7.4		<100
	2	5	40	7.4		
	3	4	36	7.4		
	4	6	35	7.4		<100
	5	6	29	7.4		<100
	6	6	36	7.4	197	<100
	7	6	30	7.5		<100
	8	5	37	7.8		<100
	9	5	37	7.5		
	10	4	34	7.6		
	11	7	34	7.6		<100
	12	7	34	7.5	400	<100
	13	11	35	7.5		<100
	14	11	37	7.5		<100
	15	12	35	7.7		<100
	16	8	33	7.5		
	17	10	31	7.4		
	18	8	31	7.6		<100
	19	8	29	7.5	0	<100
	20	10	29	7.6		<100
	21	6	22	7.5		<100
	22	5	22	7.9		<100
	23	5	27	7.6		
	24	6	28	7.6		
	25	5	24	7.6		<100
	26	8	24	7.6	2800	<100
	27	20	22	7.6	50	<100
	28	8	22	7.5		<100
	29	5	24	7.7		<100
	30	5	27	7.9		
	31					

	Sample Point	001		001		001		001		001	
	Description	Effluent		Effluent		Effluent		Effluent		Effluent	
	Parameter	649		457		377		204		112	
	Description	CBOD5		Suspended Solids, Total		pH Field		Fecal Coliform		Chlorine, Total Residual	
	Units	mg/L		mg/L		su		#/100ml		ug/L	
Summary Values	Monthly Avg	7.266666667		31		7.556666667		689.4		0	
	Daily Max	20		46		7.9		2800		<100	
	Daily Max - Variable										
	Daily Min	4		22		7.4		0		<100	
	Geometric Mean -							101.983720284			
	Week 1 Avg	5.571428571		36							
	Week 2 Avg	7.142857143		35.428571429							
	Week 3 Avg	8.857142857		30							
	Week 4 Avg	8.142857143		24.142857143							
Limit(s) in Effect	Monthly Avg	25	0	30	1						
	Daily Max					9	0			38	0
	Daily Max - Variable										
	Daily Min					6	0				
	Geometric Mean -							400	0		
	Weekly Avg	40	0	45	0						
QA/QC Information	LOD									100	
	LOQ									100	
	QC Exceedance	Y		N		N		N		N	
	Lab Certification	445005220		445005220							

	Sample Point	001	001	001	001	001
	Description	Effluent	Effluent	Effluent	Effluent	Effluent
	Parameter	388	789	87	133	147
	Description	Phosphorus, Total	Nitrogen, Ammonia (NH3-N) Total	Cadmium, Total Recoverable	Chromium, Total Recoverable	Copper, Total Recoverable
	Units	mg/L	mg/L	ug/L	ug/L	ug/L
	Sample Type	24 HR FLOW PROP	24 HR FLOW PROP	24 HR FLOW PROP	24 HR FLOW PROP	24 HR FLOW PROP
	Frequency	5/WEEK	5/WEEK	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1	0.46				
	2	0.63				
	3	0.59	0.4			
	4	0.67	1.2			
	5	0.65	1.4	<1.3	<2.5	9.5
	6	0.73	0.6			
	7	0.72	0.7			
	8	0.76				
	9	0.70				
	10	0.70	1.3			
	11	0.72	0.3			
	12	0.51	1.0			
	13	0.63	0.6			
	14	0.58	1.2			
	15	0.64				
	16	0.58				
	17	0.57	1.4			
	18	0.63	1.0			
	19	0.63	1.0			
	20	0.55	6.4			
	21	0.46	0.3			
	22	0.35				
	23	0.44				
	24	0.58	0.6			
	25	0.46	0.2			
	26	0.56	0.4			
	27	0.48	1.3			
	28	0.60	0.7			
	29	0.56				
	30	0.55				
	31					

	Sample Point	001		001		001		001	
	Description	Effluent		Effluent		Effluent		Effluent	
	Parameter	388		789		87		133	
	Description	Phosphorus, Total		Nitrogen, Ammonia (NH3-N) Total		Cadmium, Total Recoverable		Chromium, Total Recoverable	
	Units	mg/L		mg/L		ug/L		ug/L	
Summary Values	Monthly Avg	0.589666667		1.1		0		0	
	Daily Max	0.76		6.4		<1.3		<2.5	
	Daily Max - Variable								
	Daily Min	0.35		0.2		<1.3		<2.5	
	Geometric Mean -								
	Week 1 Avg			0.86					
	Week 2 Avg			0.88					
	Week 3 Avg			2.02					
	Week 4 Avg			0.64					
Limit(s) in Effect	Monthly Avg	1	0	4.40	0				
	Daily Max			17	0				
	Daily Max - Variable								
	Daily Min								
	Geometric Mean -								
	Weekly Avg			11	0				
QA/QC Information	LOD	0.026		0.045		1.3		2.5	
	LOQ	0.087		0.15		5		10	
	QC Exceedance	N		N		N		N	
	Lab Certification	445005220		445005220		405132750		405132750	

	Sample Point	001	001	001	101	601
	Description	Effluent	Effluent	Effluent	Effluent Reuse	River Monitoring
	Parameter	264	315	553	671	400
	Description	Lead, Total Recoverable	Nickel, Total Recoverable	Zinc, Total Recoverable	Flow Unregulated	WLA Previous Day River Flow
	Units	ug/L	ug/L	ug/L	MGD	cfs
	Sample Type	24 HR FLOW PROP	24 HR FLOW PROP	24 HR FLOW PROP	CONTINUOUS	GAUGE STN
	Frequency	MONTHLY	MONTHLY	MONTHLY	DAILY	DAILY
Sample Results	Day 1				1.658	4280
	2				1.921	4330
	3				2.432	4410
	4				2.682	4370
	5	<4.3	6.3	14.1	1.337	4740
	6				1.968	5200
	7				1.922	5210
	8				2.473	4610
	9				2.668	4060
	10				2.119	4040
	11				2.181	4040
	12				2.992	4020
	13				2.988	3310
	14				3.136	2480
	15				3.437	2470
	16				3.366	2500
	17				3.342	2470
	18				2.821	2420
	19				3.047	2380
	20				3.145	2510
	21				3.028	4050
	22				2.751	5210
	23				2.595	5660
	24				2.595	5600
	25				2.880	5530
	26				1.466	5540
	27				1.207	5440
	28				0.101	5400
	29				0.00	5280
	30				0.00	5250
	31					

	Sample Point	001	001	001	101	601
	Description	Effluent	Effluent	Effluent	Effluent Reuse	River Monitoring
	Parameter	264	315	553	671	400
	Description	Lead, Total Recoverable	Nickel, Total Recoverable	Zinc, Total Recoverable	Flow Unregulated	WLA Previous Day River Flow
	Units	ug/L	ug/L	ug/L	MGD	cfs
Summary Values	Monthly Avg	0	6.3	14.1	2.275266667	4227
	Daily Max	<4.3	6.3	14.1	3.437	5660
	Daily Max - Variable					
	Daily Min	<4.3	6.3	14.1	0	2380
	Geometric Mean -					
	Week 1 Avg					
	Week 2 Avg					
	Week 3 Avg					
	Week 4 Avg					
Limit(s) in Effect	Monthly Avg					
	Daily Max					
	Daily Max - Variable					
	Daily Min					
	Geometric Mean -					
	Weekly Avg					
QA/QC Information	LOD	4.3	2.6	9.3		
	LOQ	13	10	40		
	QC Exceedance	N	N	N	N	N
	Lab Certification	405132750	405132750	405132750		

	Sample Point	601	601	006	006	006
	Description	River Monitoring	River Monitoring	WLA CBOD5 Discharge Compliance	WLA CBOD5 Discharge Compliance	WLA CBOD5 Discharge Compliance
	Parameter	399	401	545	12	889
	Description	WLA Previous 4 Day Avg River Flow	WLA Previous Day River Temp	WLA CBOD5 Value	WLA Adjusted Value	WLA CBOD5 Discharged
	Units	cfs	degF	lbs/day	lbs/day	lbs/day
	Sample Type	CALCULATED	CALCULATED	SEE TABLE	CALCULATED	CALCULATED
	Frequency	DAILY	DAILY	DAILY	DAILY	DAILY
Sample Results	Day 1	1980	70	1523	2102	137
	2	2723	69	2234	3083	124
	3	3490	69	2761	3810	63
	4	4118	68	3526	4866	106
	5	4348	69	3526	4866	148
	6	4463	68	3526	4866	124
	7	4680	67	3526	4866	125
	8	4880	66	3526	4866	81
	9	4940	65	4108	5669	61
	10	4770	66	3526	4866	82
	11	4480	66	3526	4866	144
	12	4188	67	3526	4866	64
	13	4040	68	3526	4866	92
	14	3853	69	3053	4213	96
	15	3463	71	2456	3389	20
	16	3070	72	2456	3389	19
	17	2690	73	1994	2752	52
	18	2480	74	1679	2317	85
	19	2465	72	1827	2521	53
	20	2443	71	1827	2521	232
	21	2445	72	1827	2521	136
	22	2840	73	2160	2981	86
	23	3538	74	2517	3473	69
	24	4358	76	2866	3955	94
	25	5130	76	3803	5248	73
	26	5500	77	3803	5248	170
	27	5583	77	3803	5248	492
	28	5528	74	3803	5248	283
	29	5478	72	4434	6119	171
	30	5415	71	4434	6119	168
	31					

	Sample Point	601	601	006	006	006
	Description	River Monitoring	River Monitoring	WLA CBOD5 Discharge Compliance	WLA CBOD5 Discharge Compliance	WLA CBOD5 Discharge Compliance
	Parameter	399	401	545	12	889
	Description	WLA Previous 4 Day Avg River Flow	WLA Previous Day River Temp	WLA CBOD5 Value	WLA Adjusted Value	WLA CBOD5 Discharged
	Units	cfs	degF	lbs/day	lbs/day	lbs/day
Summary Values	Monthly Avg	3979.3	70.733333333	3036.733333333	4190.666666667	121.666666667
	Daily Max	5583	77	4434	6119	492
	Daily Max - Variable					492
	Daily Min	1980	65	1523	2102	19
	Geometric Mean -					
	Week 1 Avg					
	Week 2 Avg					
	Week 3 Avg					
	Week 4 Avg					
Limit(s) in Effect	Monthly Avg					
	Daily Max					
	Daily Max - Variable					0 0
	Daily Min					
	Geometric Mean -					
	Weekly Avg					
QA/QC Information	LOD					
	LOQ					
	QC Exceedance	N	N	N	N	N
	Lab Certification					

	Sample Point	006	006
	Description	WLA CBOD5 Discharge Compliance	WLA CBOD5 Discharge Compliance
	Parameter	543	542
	Description	WLA 7 Day Sum Of WLA Values	WLA 7 Day Sum Of CBOD5 Discharged
	Units	lbs/day	lbs/day
	Sample Type	CALCULATED	CALCULATED
	Frequency	DAILY	DAILY
Sample Results	Day 1	11705	1028
	2	11764	1025
	3	12507	883
	4	14367	919
	5	16271	970
	6	18415	979
	7	20622	827
	8	22625	771
	9	24499	708
	10	25264	727
	11	25264	765
	12	25264	681
	13	25264	649
	14	24791	620
	15	23721	559
	16	22069	517
	17	20537	487
	18	18690	428
	19	16991	417
	20	15292	557
	21	14066	597
	22	13770	663
	23	13831	713
	24	14703	755
	25	16827	743
	26	18803	860
	27	20779	1120
	28	22755	1267
	29	25029	1352
	30	26946	1451
	31		

	Sample Point	006		006	
	Description	WLA CBOD5 Discharge Compliance		WLA CBOD5 Discharge Compliance	
	Parameter	543		542	
	Description	WLA 7 Day Sum Of WLA Values		WLA 7 Day Sum Of CBOD5 Discharged	
	Units	lbs/day		lbs/day	
Summary Values	Monthly Avg	19447.7		801.266666667	
	Daily Max	26946		1451	
	Daily Max - Variable			1451	
	Daily Min	11705		417	
	Geometric Mean -				
	Week 1 Avg				
	Week 2 Avg				
	Week 3 Avg				
	Week 4 Avg				
Limit(s) in Effect	Monthly Avg				
	Daily Max				
	Daily Max - Variable			0	0
	Daily Min				
	Geometric Mean -				
	Weekly Avg				
QA/QC Information	LOD				
	LOQ				
	QC Exceedance	N		N	
	Lab Certification				

General Remarks

Laboratory Quality Control Comments

GGA Failure on 9-1 (232ppm)

Exceedence Comments

The Heart of the Valley Metropolitan Sewerage District had reported the suspended solids were higher than the permit limit during September 1, 2017 through September 30, 2017. The District had received a slug load of high strength leachate from the Outagamie County Landfill that contains very high ammonia concentration. Each of the landfill cells were sampled by a contractor whom inadvertently left the pump in the off position where it remained for several days until it was discovered and turned back to the auto position. The pump ran 22 hours straight in order to catch up with the District on the receiving end of this high concentration of influent ammonia. The ammonia loading overwhelmed the Biostyr with all the cells running continuously to treat the abnormally large load. This incident, when combined with the lower flows the District receives in late summer, impacted secondary treatment resulting in high TSS in the effluent. The shock load to the Biostyr overwhelmed the bacteria and it did not recover quickly enough to effectively remove enough suspended solids and meet the permit monthly average.

A meeting had been previously scheduled at the landfill to discuss better and more detailed flow and rainfall data that could be used in the Antecedent Moisture Model in place to reduce the I&I impacts at Heart of the Valley. The ammonia load ended up being the top issue at the meeting where it was determined what had happened in the landfill operation.

A second meeting followed a week later with Little Chute and it was decided that Badger Labs would do flow monitoring and sampling at the landfill to make sure all of all discharge points and typical volumes into the sewer system were certain and accounted for. The District is continuing to monitor the ammonia strengths and plans to again meet with landfill officials to discuss findings and provide concepts for better delivery of the leachate to the Little Chute collection system. The District is suggesting implementation of SOP's and the creation of a leachate management plan to avoid similar issues in the future.

Currently, the Biostyr operations have normalized and suspended solids in the effluent is trending downward. Heart of the Valley anticipates being in compliance with all permit requirements for the month of October.