

“Local Limits”

Ordinance update

9/18/18

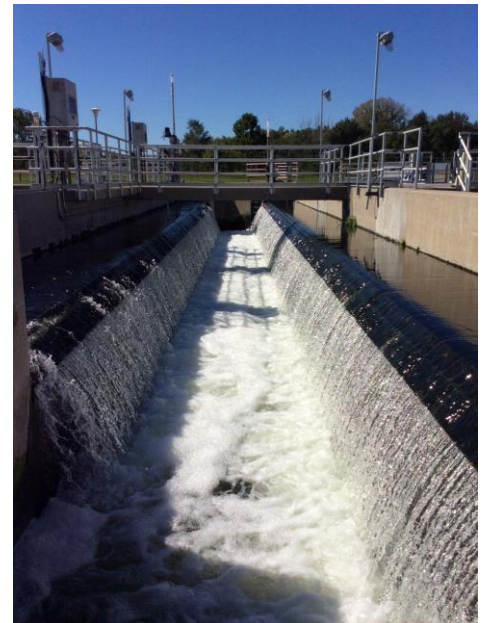


Paul Ebert

Des Moines Metropolitan WRA

Local Limits

- Local pollutant discharge limits for Industrial Dischargers
 - Numerical limits for pollutant discharges
 - Loading-based (*lbs./day*)
 - Concentration-based (*mg/L*)
- Based on actual plant data:
 - Influent
 - Effluent
 - Sludge (biosolids)
 - Domestic sewer samples (background)
 - Flow volume



Local Limits

- Required by WRF's NPDES permit to be recalculated
 - NPDES permit, page 15:

WRA shall evaluate the adequacy of its local limits to meet the general prohibitions against interference and pass through. At a minimum this shall consist of:

- 1) Identifying pollutants with the potential to cause process inhibition, pollutant pass through, endanger POTW worker health, or degrade sludge quality.*
- 2) Determine **Maximum Allowable Headworks Loading** for each pollutant*
- 3) Determine “background” pollutant loading (domestic sources) then **Maximum Allowable Industrial Loading***
- 4) Complete this evaluation by March 1, 2017*

This has been completed, submitted to IDNR, & approved for publication

AutoSave Off

LOCAL LIMITS - 2016 - Compatibility Mode - Excel

Ebert, Paul C.

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N19

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	CITY:	Des Moines, Iowa								08/28/18		Paul's Notes:				
2					LOCAL LIMITS CALCULATOR											
3		Plant	Non SIU Flow, MGD:		62.472	SLDG To Disposal, MGD:		0.05668								
4		Data:	TOTAL Flow, MGD:		64.266	SLDG Disposal %Solids:		17.6								
5			7Q10, MGD:		198.419	SITE Use, Years:		20								
6		print	Flow To Digsr: MGD:		0.40495	SITE Size, Acres:		2150								
7																
8			NPDES	Removal Efficiencies	Domestic											
9			Limit	Primary	Plant	Level	WQS	Safety	Avg. Infl.	AS	Digestion					
10	Ag	0.01087	20%	75.0%	0.003	NA	10%	0.0050	0.25	13						
11	As	0.7453	NA	45.0%	0.0065	NA	10%	0.0079	0.1	1.6						
12	Cd*	0.002247	15%	67.0%	0.00245	NA	10%	0.0030	1	20						
13	CN	0.02584	18.9%	18.9%	0.0153	NA	10%	0.0085	0.1	4						
14	Cr	0.04579	27%	82.0%	0.00645	NA	10%	0.0095	1	100						
15	Cu*	0.06707	22%	84.0%	0.02015	NA	10%	0.0425	1	40						
16	Hg	0.000745	10%	60.0%	0.00034	NA	10%	0.00032	0.1	NA						
17	Ni*	0.4659	14%	38.7%	0.00757	NA	10%	0.0124	1	10						
18	Pb*	0.03823	57%	88.6%	0.00985	NA	10%	0.0121	0.1	340						
19	Zn*	0.6169	27%	64.6%	0.0935	NA	10%	0.1339	1	400						
20	*HARDNESS DEPENDENT				NOTE: all values mg/L unless noted											
21																
22	CFS TO MGD CONVERSION															
23	1	CFS	=	0.646												
24																
25																
26																
27																

DATA

~As~Cd~Cr~Cu~CN~Pb~Hg~Ni~Ag~ZnSUMMARYHauled WasteTITLE PG.HELL_POTHERNonConSCREENDefaultPRINT

Ready

100%

NOTE: this cell equation has 366 days in it since 2016 was a leap year!

Formula: 2016 wet tons of cake * 2000 lbs per ton/6.87 lbs. per gal of dewatered sludge/366 days in 2016/1000000 to convert to MGD.

Des Moines Metro Wastewater Reclamation Facility Local Limits - 2016

	MAHL lbs	MAIL lbs	Hauled Waste Allocation lbs	MAIL minus Hauled Waste lbs
Ag	23.30434	19.765	0.264	19.501
As	7.579903	3.812	0.014	3.798
Cd	3.649526	2.157	0.928	1.230
CN	17.07729	8.278	0.291	7.987
Cr	136.347	120.897	24.739	96.158
Cu	148.5608	125.511	23.708	101.803
Hg	0.998662	0.747	0.120	0.627
Ni	87.26829	75.749	3.711	72.038
Pb	28.16955	20.943	6.700	14.243
Zn	360.5935	283.526	87.616	195.910

Uniform Concentration Limits for SIUs (non-Hauled Waste)

1.303
0.254
0.082
0.534
6.426
6.804
0.042
4.814
0.952
13.093

INDUSTRIAL LIMITS*

Daily Max mg/L	Monthly Average mg/L
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1.303	0.869	Ag
0.381	0.254	As
0.082	0.055	Cd
0.534	0.356	CN
6.426	4.286	Cr
10.206	6.804	Cu
0.042	0.028	Hg
7.222	4.814	Ni
1.428	0.952	Pb
19.640	13.093	Zn

* Non-Hauled Waste SIU concentration limits

Data to be updated in ordinance

Sec. 118-343. Local limits for specific pollutants.**Sec. 118-343(b).**

Pollutant	Maximum Allowable Headworks Loading (lbs./day)		Maximum Allowable Industrial Loading (lbs./day)	
	Total		Industrial	
Arsenic-T	4.24	7.58	3.87	3.81
Cadmium-T	2.71	3.65	2.54	2.16
Chromium-T	170.12	136.35	159.92	120.90
Copper-T	83.03	148.56	60.85	125.51
Cyanide-T	20.80	17.08	18.77	8.28
Lead-T	15.74	28.17	13.59	20.94
Mercury-T	0.63	0.999	0.59	0.747
Nickel-T	48.47	87.27	45.80	75.75
Silver-T	32.51	23.30	30.38	19.77
Zinc-T	201.54	360.59	158.34	283.53

Sec. 118-343(c)(3).

Pollutant	Daily Maximum (mg/L)		Monthly Average (mg/L)	
Arsenic-T	0.39	0.38	0.26	0.25
Cadmium-T	0.15	0.08	0.10	0.05
Chromium-T	13.33	6.43	8.89	4.29
Copper-T	3.44	10.21	2.29	6.80
Cyanide-T	1.25	0.53	0.83	0.36
Lead-T	0.61	1.43	0.41	0.95
Mercury-T	0.03	0.042	0.02	0.028
Nickel-T	4.20	7.22	2.80	4.81
O&G-T	400		—	
O&G-Mineral	100		—	
Silver-T	3.04	1.30	2.03	0.87
TPH	10.0		—	
Zinc-T	5.99	19.64	3.99	13.09

- (4) Daily maximum pollutant limits for ~~waste-haulers~~ **hailed waste**. Wastes delivered to the WRF by truck or rail shall not exceed the following ~~maximum~~ concentrations in any load **or overall daily loading limits unless otherwise approved by the WRA director:**

Pollutant	Concentration (mg/l)	Loading (pounds/day)
COD	100,000	--
O&G-T	50,000	--
TPH VPH	10.0	--
Arsenic-T	0.04 --	0.014
Cadmium-T	2.70 --	0.93
Chromium-T	72.0 --	24.74
Copper-T	69.0 --	23.71
Cyanide-T	0.75 --	0.29
Lead-T	19.5 --	6.70
Mercury-T	0.35 --	0.12
Nickel-T	10.8 --	3.71
Silver-T	--	0.26
Zinc-T	255.0 --	87.62

Any Questions?

