From: Ashleigh Mustin
To: Samantha ONeil
Subject: [EXTERNAL] RE: AUB- North Mouse Creek Pass Through Limits
Date: Thursday, July 28, 2022 11:30:13 AM
Attachments: image001.png
2022 LL Technical Review REV. 7-28-22.pdf

Thanks for your help. Please let me know if this is OK.

Thanks,

Ashleigh B. Mustin, P.E.
Water & Wastewater Division
Athens Utilities Board
(423) 507-6032

From: Samantha ONeil <Samantha.ONeil@tn.gov>
Sent: Thursday, July 28, 2022 9:00 AM
To: Ashleigh Mustin <amustin@aub.org>
Subject: RE: AUB- North Mouse Creek Pass Through Limits

Okay, if you could update the rationale to cover what I stated below and that there has been a history of compliance with copper, I believe you will be all set.

From: Ashleigh Mustin <amustin@aub.org>
Sent: Wednesday, July 27, 2022 6:51 AM
To: Samantha ONeil <Samantha.ONeil@tn.gov>
Subject: [EXTERNAL] RE: AUB- North Mouse Creek Pass Through Limits

No, they haven't.

Ashleigh B. Mustin, P.E.
Water & Wastewater Division
Athens Utilities Board
(423) 507-6032

From: Samantha ONeil <Samantha.ONeil@tn.gov>
Sent: Thursday, July 21, 2022 10:28 AM
To: Ashleigh Mustin <amustin@aub.org>
Subject: RE: AUB- North Mouse Creek Pass Through Limits

Sorry about that I should have been more clear. The appendix I referred to is from the EPA Guidance document on the development of Local Limits (attached). The main reason I asked is the nitrification

inhibition value listed in the appendix for copper is a range of 0.05-0.48. The value used in the calculations was 0.082. If the lowest value in the range were used it would make the LL 0.422 instead of 0.865 which is less than the current limit of 0.72. Do you know if Mouse Creek has ever had any exceedances of copper?

From: Ashleigh Mustin <amustin@aub.org>
Sent: Thursday, July 21, 2022 9:20 AM
To: Samantha ONeil <Samantha.ONeil@tn.gov>
Subject: [EXTERNAL] RE: AUB- North Mouse Creek Pass Through Limits

Honestly, I'm not sure what Appendix G you're referring to; and the only thing I changed in Table 4 was the POTW flow. I'm not aware of how the nitrification inhibition level is established.

Ashleigh B. Mustin, P.E.
Water & Wastewater Division
Athens Utilities Board
(423) 507-6032

From: Samantha ONeil <Samantha.ONeil@tn.gov>
Sent: Thursday, July 21, 2022 9:59 AM
To: Ashleigh Mustin <amustin@aub.org>
Subject: RE: AUB- North Mouse Creek Pass Through Limits

Okay one final question then I believe we'll be in the clear: I noted in Table 4 LL based on Nitrification Inhibition that the inhibition values used for Copper and Zinc do not match the others. All other values listed are the lower or exact value from Appendix G. Copper nor zinc are listed as the lowest value, an average of range or highest value. How were these data points decided on?

From: Ashleigh Mustin <amustin@aub.org>
Sent: Thursday, July 21, 2022 8:44 AM
To: Samantha ONeil <Samantha.ONeil@tn.gov>
Subject: [EXTERNAL] RE: AUB- North Mouse Creek Pass Through Limits

Here is an extracted page from an IU permit for a NMC industry. Will that work?

Ashleigh B. Mustin, P.E.
Water & Wastewater Division
Athens Utilities Board
(423) 507-6032

From: Samantha ONeil <Samantha.ONeil@tn.gov>
Sent: Thursday, July 21, 2022 9:33 AM
To: Ashleigh Mustin <amustin@aub.org>

Subject: RE: AUB- North Mouse Creek Pass Through Limits

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

One last request. Could I get an electronic copy of the 2016 limits for North Mouse Creek?

From: Ashleigh Mustin <amustin@aub.org>
Sent: Thursday, July 21, 2022 7:39 AM
To: Samantha ONeil <Samantha.ONeil@tn.gov>; Adam Bonomo <Adam.Bonomo@tn.gov>; Jessica Rader <Jessica.Rader@tn.gov>
Cc: Craig Brymer <cbrymer@aub.org>
Subject: [EXTERNAL] RE: AUB- North Mouse Creek Pass Through Limits

See attached.

Ashleigh B. Mustin, P.E.
Water & Wastewater Division
Athens Utilities Board
(423) 507-6032

From: Samantha ONeil <Samantha.ONeil@tn.gov>
Sent: Thursday, July 21, 2022 8:37 AM
To: Ashleigh Mustin <amustin@aub.org>; Adam Bonomo <Adam.Bonomo@tn.gov>; Jessica Rader <Jessica.Rader@tn.gov>
Cc: Craig Brymer <cbrymer@aub.org>
Subject: RE: AUB- North Mouse Creek Pass Through Limits

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Ashleigh,

Thank you for your submission. For ease of review, could you send a copy of the spreadsheet used for calculations?

Thank you,

Samantha O'Neil | Environmental Protection Specialist II
Division of Water Resources
William R. Snodgrass Tennessee Tower, 11th Floor
312 Rosa L. Parks Avenue
Nashville, TN 37243
p. 615-961-4440
samantha.oneil@tn.gov

//tn.gov/environment

From: Ashleigh Mustin <amustin@aub.org>
Sent: Wednesday, July 20, 2022 3:07 PM
To: Samantha ONeil <Samantha.ONeil@tn.gov>; Adam Bonomo <Adam.Bonomo@tn.gov>; Jessica Rader <Jessica.Rader@tn.gov>
Cc: Craig Brymer <cbrymer@aub.org>
Subject: [EXTERNAL] RE: AUB- North Mouse Creek Pass Through Limits

All,

Please find a copy of AUB's technical evaluation of NMC local limits attached. Please contact me if there are any questions.

Kind regards,

Ashleigh B. Mustin, P.E.
Water & Wastewater Division
Athens Utilities Board
(423) 507-6032

From: Samantha ONeil <Samantha.ONeil@tn.gov>
Sent: Tuesday, March 29, 2022 2:23 PM
To: Ashleigh Mustin <amustin@aub.org>
Cc: Craig Brymer <cbrymer@aub.org>; Adam Bonomo <Adam.Bonomo@tn.gov>; Jessica Rader <Jessica.Rader@tn.gov>
Subject: AUB- North Mouse Creek Pass Through Limits

Good afternoon,

Attached for your records is the letter containing the newly calculated passthrough limits for Athens Utilities Board North Mouse Creek WWTP. Due to the COVID-19 pandemic, this notice will only be sent via email. No hard copy will follow. If you need a hard copy, please let me know and I will do my best to accommodate you. Please don't hesitate to reach out if you have any questions or concerns.

Thank you,

Samantha O'Neil | Environmental Protection Specialist II
Division of Water Resources
William R. Snodgrass Tennessee Tower, 11th Floor
312 Rosa L. Parks Avenue
Nashville, TN 37243
p. 615-961-4440
samantha.oneil@tn.gov
//tn.gov/environment

Athens Utilities Board

100 New Englewood Rd. • Athens, Tennessee 37371-0689 • (423) 745-4501

July 28, 2022

Mr. Adam Bonomo
TN Division of Water Resources – Compliance and Enforcement Unit
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, TN 37243

Re: Athens Utilities Board
Local Limits Review
NPDES Permit No. TN0067539
McMinn County, Tennessee

Dear Mr. Bonomo,

AUB has conducted a technical evaluation of local limits following the revision of Pass Through Limits (PTLs) for the North Mouse Creek WWTP (TN0067539). There has been a slight increase in average daily flow since the last local limits review in 2016. Industrial user flow totals from the April 2022 SAR were used. Removal efficiencies either stayed the same or were changed to the last recorded numbers according to SAR Form 1a data (April 2022). The attached tables show the results from this evaluation. The following are remarks of the review.

Table 1 - Local Limits Determination Based on NPDES Daily Effluent Limits

There were several constituents that resulted in a lower local limit. The chromium local limit suggested using Table 1 is 1.32mg/l (currently 1.5mg/l). However, the NMC WWTP consistently has chromium results well below the protection criteria and pass-through limit. Silver, toluene, 1-1-1 trichloroethane, ethylbenzene, 1-2 trans-dichloroethylene, and phthalates have historically all been below detection level.

Table 3 - Local Limits Determination Based on Activated Sludge Inhibition Level

Results in Table 3 were much higher than the limits imposed.

Table 4 - Local Limits Determination Base on Nitrification Inhibition Level

Results in Table 4 were much higher than the limits imposed. A nitrification inhibition level of 0.082 mg/l was used for copper. AUB's NMC plant has had no issues staying in compliance with the local limit set at 0.72 mg/l.

Table 5 - Local Limits Determination Based on USEPA 503 Sludge Regulations

The review using Table 5 suggested a local limit for nickel being 0.775mg/l (currently 1.0mg/l). Nickel is also consistently below the protection criteria and pass-through limit (0.104mg/l and 0.18mg/l, respectively).

Conclusion

North Mouse Creek has not had substantial change to flow or wastewater characteristics since the last evaluation. The local limits review tables utilized show a small variation of current local limits; but with the reputable history of NMC's pass-through results, AUB determines it unnecessary to alter the standing local limits.

Please call or email me with any questions or comments. I can be reached at (423) 507-6032 or amustin@aub.org.

Sincerely,

Ashleigh Mustin, P.E.
Division of Water & Wastewater
Athens Utilities Board

Limitations on Wastewater Pollutant Concentrations (all values in mg/L unless specified)

Parameter	Surcharge**	Daily Maximum	Frequency	Type Sample
Biochemical Oxygen Demand, 5 Day, lbs		16,000 lbs	1/4 mo	24 HC[1]
pH		5-10 Std Units	1/4 mo	Grab
Arsenic		0.026	NA	24 HC
Copper		0.72	1/4 mo	24 HC
Chromium, Total		1.5	1/4 mo	24 HC
Nickel		1.0	1/4 mo	24 HC
Cadmium		.01	1/4 mo	24 HC
Lead		0.09	1/4 mo	24 HC
Mercury		0.0033	1/4 mo	24 HC
Zinc		1.8	1/4 mo	24 HC
Molybdenum		N/A	1/4 mo	24 HC
Selenium		0.23	1/4 mo	24 HC
Silver		0.28	1/4 mo	24 HC
Cyanide		0.19	1/4 mo	Grab
Phenols, Total		3.61	1/4 mo	Grab
Phthalates, Total		1.74	NA	24 HC
Benzene*		0.1	NA	Grab
Toluene*		3.2	NA	Grab
1,1,1 Trichloroethane*		3.04	NA	Grab
Ethylbenzene *		0.42	NA	Grab
Carbon Tetrachloride*		0.3	NA	Grab
Chloroform*		1.8	NA	Grab
Tetrachloroethylene*		0.11	NA	Grab
Trichloroethylene*		0.79	NA	Grab
1,2 trans Dichloroethylene*		0.053	NA	Grab
Methylene Chloride*		0.76	NA	Grab
Napthalene*		0.053	NA	Grab

TABLE 1

NMC - Local Limits Determination Based on NPDES Daily Effluent Limits

Pollutant	ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE						MAXIMUM LOADING		INDUSTRIAL		
	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Removal Efficiency (%) (Rpotw)	NPDES Daily Limit (mg/l) (Ccrit)	Domestic and Conc. (mg/l) (Cdom)	Commercial Flow (MGD) (Qdom)	Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	Allowable Loading (lbs/day) (Lind)	Local Limit (mg/l) (Cind)	Safety Factor (%) (SF)
Cadmium	0.076	1.17	67	0.005	0.00038	1.03	0.147845455	0.003264276	0.129796633	0.20477823	10
Chromium	0.076	1.17	40	0.06	0.0042	1.03	0.97578	0.03607884	0.84212316	1.32860526	10
Hex. Chrome.	0.076	1.17	82	0.0267	0.0029	1.03	1.447407	0.02491158	1.27775472	2.01589474	10
Tri. Chrome	0.076	1.17	70	Report	0.0032	1.03	-	0.02748864	-	-	10
Copper	0.076	1.17	98	0.08	0.02	1.03	39.0312	0.171804	34.956276	55.15	10
Cyanide	0.076	1.17	68	0.00907	0.0037	1.03	0.276572644	0.03178374	0.217131639	0.34256538	10
Lead	0.076	1.17	55	0.045	0.00093	1.03	0.97578	0.007988886	0.870213114	1.37292237	10
Mercury	0.076	1.17	92	0.00009	0.000025	1.03	0.010977525	0.000214755	0.009665018	0.01524836	10
Nickel	0.076	1.17	48	0.18	0.0069	1.03	3.3777	0.05927238	2.98065762	4.70253947	10
Silver	0.076	1.17	75	0.005	0.00039	1.03	0.195156	0.003350178	0.172290222	0.27181974	10
Phenols	0.076	1.17	90	0.05	0.049	1.03	4.8789	0.4209198	3.9700902	6.26355263	10
Phthalates	0.076	1.17	62	0.0645	0.054	1.03	1.656258158	0.4638708	1.026761542	1.61990651	10
Zinc	0.076	1.17	80	0.2	0.1	1.03	9.7578	0.85902	7.923	12.5	10
Toluene	0.076	1.17	93	0.015	0.005	1.03	2.090957143	0.042951	1.838910429	2.9012218	10
Benzene	0.076	1.17	80	0.003	0.001	1.03	0.146367	0.0085902	0.1231401	0.19427632	10
1,1,1 Trichloe	0.076	1.17	85	0.03	0.001	1.03	1.95156	0.0085902	1.7478138	2.7575	10
Ethylbenzene	0.076	1.17	86	0.004	0.001	1.03	0.278794286	0.0085902	0.242324657	0.38231203	10
Carbon Tetra	0.076	1.17	95	0.015	0.001	1.03	2.92734	0.0085902	2.6260158	4.14302632	10
Chloroform	0.076	1.17	67	0.085	0.005	1.03	2.513372727	0.042951	2.219084455	3.50101675	10
Tetrachloroe	0.076	1.17	80	0.025	0.0027	1.03	1.219725	0.02319354	1.07455896	1.69531579	10
Trichloroethy	0.076	1.17	89	0.01	0.001	1.03	0.887072727	0.0085902	0.789775255	1.24601675	10
1,2 Transdich	0.076	1.17	67	0.0015	0.001	1.03	0.044353636	0.0085902	0.031328073	0.04942584	10
Napthalene	0.076	1.17	78	0.001	0.001	1.03	0.044353636	0.0085902	0.031328073	0.04942584	10
Meth Chloride	0.076	1.17	62	0.05	0.005	1.03	1.283921053	0.042951	1.112577947	1.75529778	10

(Qind) Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contains a particular pollutant.
(Qpotw) POTW's average influent flow in MGD.
(Rpotw) Removal efficiency across POTW as percent.
(Ccrit) NPDES daily maximum permit limit for a particular pollutant in mg/l.
(Qdom) Domestic/commercial background flow in MGD.
(Cdom) Domestic/commercial background concentration for a particular pollutant in mg/l.
(Lhw) Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs/day).
(Ldom) Domestic/commercial background loading to the POTW for a particular pollutant in pounds per day (lbs/day).
(Lind) Maximum allowable industrial loading to the POTW in pounds per day.
(Cind) Industrial allowable local limit for a given pollutant in mg/l.
(SF) Safety factor as a percent.
8.34 Unit conversion factor

$$Lhw = \frac{8.34 * Ccrit * Qpotw}{1 - Rpotw}$$

|::

TABLE 3

Local Limits Determination Based on Activated Sludge Inhibition Level

Pollutant	ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE						MAXIMUM LOADING		INDUSTRIAL		
	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Removal Efficiency (%) (Rprim)	Activated Sludge Inhibition Level (mg/l) (Ccrit)	Domestic and Commercial Conc. (mg/l) (Cdom)	Flow (MGD) (Qdom)	Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	Allowable Loading (lbs/day) (Lind)	Local Limit (mg/l) (Cind)	Safety Factor (%) (SF)
Arsenic	0.076	1.17	0	0.1	0.0024	1.03	0.97578	0.02061648	0.85758552	1.353	10
Cadmium	0.076	1.17	0	1	0.00038	1.03	9.7578	0.003264276	8.778755724	13.8501132	10
Chromium	0.076	1.17	0	1	0.0042	1.03	9.7578	0.03607884	8.74594116	13.7983421	10
Copper	0.076	1.17	0	1	0.02	1.03	9.7578	0.171804	8.610216	13.5842105	10
Cyanide	0.076	1.17	0	0.1	0.0037	1.03	0.97578	0.03178374	0.84641826	1.33538158	10
Lead	0.076	1.17	0	1	0.00093	1.03	9.7578	0.007988886	8.774031114	13.8426592	10
Mercury	0.076	1.17	0	0.1	0.000025	1.03	0.97578	0.000214755	0.877987245	1.3851875	10
Nickel	0.076	1.17	0	1	0.0069	1.03	9.7578	0.05927238	8.72274762	13.76175	10
Silver	0.076	1.17	0	0.25	0.00039	1.03	2.43945	0.003350178	2.192154822	3.45853026	10
Phenols	0.076	1.17	0	50	0.049	1.03	487.89	0.4209198	438.6800802	692.099079	10
Zinc	0.076	1.17	0	0.3	0.1	1.03	2.92734	0.85902	1.775586	2.80131579	10

(Qind) Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contains a particular pollutant.
(Qpotw) POTW's average influent flow in MGD.
(Rprim) Removal efficiency across across primary treatment as percent.
(Ccrit) Activated sludge threshold inhibition level, mg/l.
(Qdom) Domestic/commercial background flow in MGD.
(Cdom) Domestic/commercial background concentration for a particular pollutant in mg/l.
(Lhw) Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs/day).
(Ldom) Domestic/commercial background loading to the POTW for a particular pollutant in pounds per day (lbs/day).
(Lind) Maximum allowable industrial loading to the POTW in pounds per day.
(Cind) Industrial allowable local limit for a given pollutant in mg/l.
(SF) Safety factor as a percent.
8.34 Unit conversion factor

$$Lhw = \frac{8.34 * Ccrit * Qpotw}{1 - Rprim}$$

|::

TABLE 4
Local Limits Determination Based on Nitrification Inhibition Level

Pollutant	ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE						MAXIMUM LOADING		INDUSTRIAL		
	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Removal Efficiency (%) (Rsec)	Nitrification Inhibition Level (mg/l) (Ccrit)	Domestic and Commercial Conc. (mg/l) (Cdom)	Flow (MGD) (Qdom)	Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	Allowable Loading (lbs/day) (Lind)	Local Limit (mg/l) (Cind)	Safety Factor (%) (SF)
Arsenic	0.076	1.17	0	1.5	0.0024	1.03	14.6367	0.02061648	13.15241352	20.7503684	10
Cadmium	0.076	1.17	0	5.2	0.00038	1.03	50.74056	0.003264276	45.66323972	72.0422184	10
Chromium	0.076	1.17	0	0.25	0.0042	1.03	2.43945	0.03607884	2.15942616	3.40689474	10
Copper	0.076	1.17	0	0.082	0.02	1.03	0.8001396	0.171804	0.54832164	0.86507895	10
Cyanide	0.076	1.17	0	0.34	0.0037	1.03	3.317652	0.03178374	2.95410306	4.66064474	10
Lead	0.076	1.17	0	0.5	0.00093	1.03	4.8789	0.007988886	4.383021114	6.91502763	10
Nickel	0.076	1.17	0	0.25	0.0069	1.03	2.43945	0.05927238	2.13623262	3.37030263	10
Phenol	0.076	1.17	0	4	0.049	1.03	39.0312	0.4209198	34.7071602	54.7569737	10
Zinc	0.076	1.17	0	**0.33**	0.1	1.03	3.220074	0.85902	2.0390466	3.21697368	10

(Qind) Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contains a particular pollutant.
(Qpotw) POTW's average influent flow in MGD.
(Rsec) Removal efficiency across primary treatment and secodary treatment as percent.

(Ccrit) Nitrification threshold inhibition level, mg/l.
(Qdom) Domestic/commercial background flow in MGD.
(Cdom) Domestic/commercial background concentration for a particular pollutant in mg/l.
(Lhw) Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs/day).
(Ldom) Domestic/commercial background loading to the POTW for a particular pollutant in pounds per day (lbs/day).
(Lind) Maximum allowable industrial loading to the POTW in pounds per day.
(Cind) Industrial allowable local limit for a given pollutant in mg/l.
(SF) Safety factor as a percent.
8.34 Unit conversion factor

$$Lhw = \frac{8.34 * Ccrit * Qpotw}{1 - Rsec}$$

|:: Pollutant Contration"Clean" 503.13

TABLE 5

Local Limits Determination Based on USEPA 503 Sludge Regulations

Pollutant	ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE								MAXIMUM LOADING		INDUSTRIAL		
	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Sludge Flow (MGD) (Qsldg)	Percent Solids (%) (PS)	Removal Efficiency (%) (Rpotw)	503 Sludge Criteria (mg/kg) (Cslcrit)	Domestic and Conc. (mg/l) (Cdom)	Commercial Flow (MGD) (Qdom)	Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	Allowable Loading (lbs/day) (Lind)	Local Limit (mg/l) (Cind)	Safety Factor (%) (SF)
Arsenic	0.076	1.17	0.0131	0.64	45	41	0.0024	1.03	0.063707221	0.02061648	0.036720019	0.057932632	10
Cadmium	0.076	1.17	0.0131	0.64	67	39	0.00038	1.03	0.040701192	0.00326428	0.033366796	0.052642302	10
Copper	0.076	1.17	0.0131	0.64	98	1500	0.02	1.03	1.070243265	0.171804	0.791414939	1.248603652	10
Lead	0.076	1.17	0.0131	0.64	55	300	0.00093	1.03	0.381395782	0.00798889	0.335267318	0.528946292	10
Mercury	0.076	1.17	0.0131	0.64	92	17	0.000025	1.03	0.012920473	0.00021476	0.011413671	0.01800718	10
Nickel	0.076	1.17	0.0131	0.64	48	420	0.0069	1.03	0.6118224	0.05927238	0.49136778	0.775223684	10
Selenium	0.076	1.17	0.0131	0.64	50	100	0.004	1.03	0.13984512	0.0343608	0.091499808	0.144357895	10
Zinc	0.076	1.17	0.0131	0.64	80	2800	0.1	1.03	2.4472896	0.85902	1.34354064	2.119684211	10

(Qind) Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contains a particular pollutant.
(Qpotw) POTW's average influent flow in MGD.
(Qsldg) Sludge flow to disposal in MGD.
(PS) Percent solids of sludge to disposal.
(Rpotw) Removal efficiency across POTW as a percent.
(Cslcrit) 503 sludge criteria in mg/kg dry sludge.
(Qdom) Domestic/commercial background flow in MGD.
(Cdom) Domestic/commercial background concentration for a particular pollutant in mg/l.
(Lhw) Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs/day).
(Ldom) Domestic/commercial background loading to the POTW for a particular pollutant in pounds per day (lbs/day).
(Lind) Maximum allowable industrial loading to the POTW in pounds per day.
(Cind) Industrial allowable local limit for a given pollutant in mg/l.
(SF) Safety factor as a percent.
8.34 Unit conversion factor

$$Lhw = \frac{8.34 * Cslcrit * (PS/100) * Qsldg}{Rpotw}$$