



Alabama Department of Environmental Management
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MR DAVID DENARD
DIRECTOR
JEFFERSON COUNTY COMMISSION - ENVIRONMENTAL SERVICE DEPARTMENT
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BIRMINGHAM AL 35203

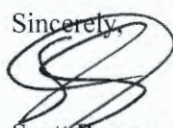
Re: DRAFT LOCAL LIMITS
JEFFERSON COUNTY COMMISSION
LEEDS WWTP
NPDES PERMIT NO. AL0067067

Dear Mr. Denard:

The Alabama Department of Environmental Management transmitted proposed local limits documents for your review on October 18, 2018. Following that review, the Jefferson County Commission advised ADEM of their intention to establish a sampling program to collect site-specific data related to the operation of the Leeds WWTP. As of this date, ADEM has not received results from that sampling effort.

This letter is to request that sampling results be submitted to ADEM no later than 30 days from the date of this letter. Alternately, if sampling is no longer proposed we request notification of that decision within the same time period. If sampling results are not received, ADEM proposes to proceed with the public notice of local limits as drafted. In this regard, please review the attached documents as there may have been minor changes since your initial draft was developed.

Should you have any questions about this process, please contact Alex Chavers by email at achavers@adem.alabama.gov or by phone at (334) 271-7851.

Sincerely,


Scott Ramsey, Chief
Industrial Section
Industrial/Municipal Branch
Water Division

Attachments: Draft Local Limits
Rationale for Local Limits
Local Limits/Pass Through Calculations

CC: Margaret Tanner/Jefferson County Commission
Harsco Industrial
M & B Hangers
Dustin Stokes
Alex Chavers



LOCAL LIMITS

PUBLICLY OWNED TREATMENT WORKS: LEEDS WWTP
LOCATION: LEEDS, ALABAMA
JEFFERSON COUNTY
PERMIT NUMBER: AL0067067

GENERAL PRETREATMENT PROHIBITIONS

No discharge to the Publicly Owned Treatment Works (POTW) shall exceed or otherwise violate the General Pretreatment Standards described in ADEM Administrative Code 335-6-5. Specifically the POTW shall ensure that discharges to their system comply with the following prohibitions to ensure protection of the treatment and collections systems and to ensure worker safety:

Pollutants which create a fire or explosion hazard including but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit;

Pollutants which will cause corrosive structural damage to the treatment works but in no case discharges with a pH lower than 5.0 S.U. unless the treatment works are specifically designed to accommodate such discharges;

Solid or viscous pollutants in amounts which will cause obstruction to the flow in sewers or other interference with the operation of the treatment works;

Any pollutant, including oxygen demanding pollutants released in a discharge of such volume or strength as to cause interference in the treatment works;

Heat in amounts which will inhibit biological activity in the treatment plant resulting in interference, but in no case in such quantities that the temperature of the effluent at the treatment plant exceeds 104 degrees Fahrenheit unless the treatment plant is designed to accommodate such heat;

Pollutants which will result in the presence of toxic gases, vapors or fumes within the treatment works in a quantity that may cause acute worker health and safety problems;

Any trucked or hauled pollutants except at discharge points designated by the treatment works; and

Petroleum oil, nonbiodegradable cutting oil, or products of mineral origin in such amounts that will cause interference or pass through.

GENERAL PRETREATMENT STANDARDS AND LOCAL LIMITS

POLLUTANTS:

The total average daily loading of the substances from all sources shall not exceed the indicated mass listed below.

<u>Parameter</u>	<u>Allowable Average Daily Pollutant Load at Headworks of POTW</u> (lbs/day)
Arsenic, Total Recoverable	0.0816
Cadmium, Total Recoverable	0.1679
Chromium, Total Recoverable	83.40
Copper, Total Recoverable	9.594
Cyanide, Free	0.5943
Lead, Total Recoverable	2.068
Mercury, Total Recoverable	0.0036
Nickel, Total Recoverable	2.600
Silver, Total Recoverable	1.040
Zinc, Total Recoverable	16.68

No future loading above the domestic wastewater concentration of Cyanide will be allowed. All new or expanding industrial dischargers containing these pollutants shall be limited as indicated below:

<u>Parameter</u>	<u>Allowable Average Concentration</u>
	(mg/l)
Cyanide, Free	0.04

HYDRAULIC LOADING:

The hydraulic loading on an average basis is the design capacity of the treatment plant which is 2.0 million gallons per day.

ORGANIC LOADING:

The organic loading (CBOD₅) is the design capacity of the treatment plant which is 2785 pounds per day.

SOLIDS LOADING

The Total Suspended Solids loading (TSS) is the design capacity of the treatment plant which is 3336 pounds per day.

EFFECTIVE DATE:

ISSUANCE DATE:

DRAFT

Alabama Department of Environmental Management

Rationale for Local Limits

Leeds WWTP (AL0067067)
2.0 MGD activated sludge facility
Leeds/ Jefferson County

Reissuance
Prepared Date: 9/26/2018
Prepared By: Ed Hughes
Revised Date: 4/1/2019
1/7/2020

Nonconventional Pollutants:

Pass Through:

Allowable pollutant loadings were based on state water quality standards applicable to streams with a use designated of Fish & Wildlife. Local limits calculations were performed using a receiving stream 7Q10 of 3.48 cfs, 1Q10 of 2.47 cfs, an annual average flow of 34.32 cfs and a stream hardness of 164 mg/l as CaCO₃. The treatment plant removal rates and untreated domestic sewage pollutant concentrations were based on Best Professional Judgment using literature values and EPA recommended levels as the basis unless site specific data was available. Calculations estimate the allowable quantity of heavy metals (measured as Total Recoverable) and Free Cyanide that can be discharged into the POTW to ensure that state water quality standards for aquatic toxicity and human health criteria are met in the receiving stream during critical flow conditions. Because only the portion of heavy metals present in dissolved form is "bioavailable" to aquatic life, the calculations which evaluate aquatic toxicity take into account the relationship between "dissolved" metals and metals measured using the Total Recoverable test procedure.

The other contributor of pollutants of concern (POCs) that discharge into this stream segment and that was considered in the spreadsheet calculations was Highway 411 WWTP. The flow from this source was added to the "flow from other contributors" space on the spreadsheet. The allowable mass of POCs that can be discharged from the Highway 411 WWTP was input into Column 8 (allocation from background sources). The allowable pollutant loadings based on pass through concerns are located in column 11 of the Local Limits-Pass Through (LL-PT) spreadsheet.

Interference:

The Department evaluated the potential for processes at the POTW to be inhibited as result of the pollutant loading entering the treatment works. Inhibition values were based on Best Professional Judgment using literature values and EPA recommended levels as the basis unless site specific information was provided by the POTW. The allowable pollutant loadings based on inhibition concerns are located in column 13 of the LL-PT spreadsheet.

Sludge Disposal:

The POTW disposes of sludge by land application. According to the most recent MWPP report, this plant generated 258 dry metric tons of sludge annually based on an annual average flow of 1.2 MGD. Of this total 27 metric tons were land applied. For the purpose of developing local limits for this site, it is assumed that all sludge will be land applied. At the design flow of 2 MGD the POTW would generate 1.3 US tons per day. This value will be used in the local limit calculations. For POTWs that use land application as a means of disposal the LL-PT spreadsheet calculates the allowable pollutant loading to ensure that metal

concentrations in the sludge comply with EPA 503 regulations for land application of biosolids. The results of these calculations are located in column 14 of the spreadsheet.

Column 15 of the LL-PT spreadsheet indicates the most stringent of the above three criteria. These loadings are considered the POTW's total headworks capacity for the pollutants of concern.

The LL-PT spreadsheet also lists the current loading of the pollutants of concern from domestic/commercial and industrial sources and determines the remaining capacity currently available. Domestic/commercial loadings are indicated in Columns 16 and current industrial loadings are shown in column 17 (a listing of each significant industrial user and their permit limits and average reported discharge level for pollutants without permit limits is shown on the attached Significant Industrial User sheet). Column 18 of that spreadsheet shows the remaining capacity after subtracting the current loadings. Negative values indicate that no additional capacity is available for these pollutants. Specifically, these calculations estimate that no additional loading of Cyanide above the domestic sewage concentration can be allowed; therefore, new and expanded discharges shall be limited to domestic sewage concentrations. The limiting factor for this pollutant is shown below:

<u>Parameter</u>	<u>Limiting Factor</u>
Cyanide, Free	Water Quality

It should be noted that the available pollutant loadings shown in column 18 have been reduced by 10%, which is the percent of total capacity reserved for future growth.

Conventional Pollutants

Temperature:

The Department is not aware of any specific circumstances related to this POTW which require a temperature limitation more stringent than general standards and prohibitions contained in ADEM Administrative code 335-6-5-.03(2)(e).

pH:

The Department is not aware of any specific circumstances related to this POTW which require a minimum pH limitation more stringent than general standards and prohibitions contained in ADEM Administrative code 335-6-5-.03(2)(b).

Hydraulic loading:

The hydraulic loading is the design capacity of the treatment plant as indicated by the POTW, 2.0 MGD.

Organic loading:

The organic loading (CBOD₅) is the design capacity of the treatment plant. This loading was calculated using the design flow of the POTW and an influent CBOD₅ concentration of 167 mg/l.

Total Suspended Solids loading

The Total Suspended Solids (TSS) loading was calculated using the design flow of the POTW and an influent TSS concentration of 200 mg/l.

While ADEM develops local limits and reviews compliance, POTWs are responsible for ensuring proper management of Significant Industrial Users and other sources to meet their NPDES limits and to prevent pass through and interference problems and to ensure compliance with the prohibitions contained in ADEM Administrative Code 335-6-5-.03 for protection of the treatment works, collection system and worker safety. The POTWs' responsibilities include establishing any additional limitations via local ordinances, etc. to protect the POTW and comply with their permit.

Revision Date (4/1/2019):

Local limits were calculated using the most recent version of the local limit spreadsheet. Allowable loadings were changed to be consistent with calculated values from the updated document. The above discussion of sludge disposal was revised to utilize actual data provided by the POTW's MWSS report to determine loading limitations related to this concern. The previous version used assumed values.

Revision Date (1/7/2020):

The Local Limit- Pass Through spreadsheet and Local Limit documents were updated to the most recent versions.

LOCAL LIMIT/ PASS THROUGH CALCULATIONS

POTW NAME: Jefferson County Leeds WWTP
 NPDES PERMIT NUMBER: AL0067067

DATE PREPARED: 4/1/2019
 PREPARED BY: Ed Hughes
 UPDATED: 1/7/2020

STREAM DATA AND POTW FLOW DATA					
RECEIVING STREAM CLASSIFICATION	=	F & W	0	RECEIVING STREAM TIDALLY INFLUENCED =	No
POTW DESIGN FLOW	=		2 MGD		
FLOW FROM OTHER CONTRIBUTORS	=		0.95 MGD		
DOMESTIC FLOW	=		1.9408 MGD		
7Q10	=		3.48 CFS	OR	2,248 MGD
1Q10	=		2.47 CFS	OR	1,596 MGD
7Q2	=		5.04 CFS	OR	3,256 MGD
ANNUAL AVG FLOW	=		34.32 CFS	OR	22,171 MGD
STREAM HARDNESS (DEFAULT VALUE 100)	=		164 MG/L AS CaCO3		

ALLOWABLE LOADING TO STREAM BASED ON WATER QUALITY AND HH STANDARDS										
PARAMETER	1) CHRONIC	SW CHRONIC	2) MAX W O	3) ACUTE	SW ACUTE	4) MAX W O	5) HUMAN	6) MAX W O	7) WQ / HH	PARAMETER
	TOXICITY	TOXICITY	INSTREAM	TOXICITY	TOXICITY	INSTREAM	HEALTH	INSTREAM	BASED DISC	
	(MG/L)	(MG/L)	(LBS/D)	(MG/L)	(MG/L)	(LBS/D)	(MG/L)	(LBS/D)	LEVEL (LBS/D)	
ANTIMONY, TOTAL RECOVERABLE	----	----	----	----	----	----	0.373333	16.185	16.185	ANTIMONY, TR
ARSENIC, TRIVALENT	0.1500	----	6.503	0.3400	----	12.890	0.00030	0.063	0.063	ARSENIC, TRI
CADMIUM, TOT RECOVERABLE	0.0003	----	0.064	0.0033	----	0.523	----	----	0.064	CADMIUM, TR
CHROMIUM, TOT RECOVERABLE	0.1111	----	22.943	0.8544	----	154.238	----	----	22.943	CHROMIUM, TR
CHROMIUM, HEXVALENT	0.0110	----	0.477	0.0160	----	0.607	----	----	0.477	CHROMIUM, HEX
COPPER, TOTAL RECOVERABLE	0.0137	----	1.527	0.0214	----	2.089	----	----	1.527	COPPER, TR
CYANIDE, FREE	0.0052	----	0.225	0.0220	----	0.834	9.3333	404.62	0.225	CYANIDE, FREE
LEAD, TOT RECOVERABLE	0.0043	----	0.904	0.1102	----	20.277	----	----	0.904	LEAD, TR
MERCURY, TOT RECOVERABLE	0.000012	----	0.002	0.0024	----	0.301	0.0000424	0.002	0.00172	MERCURY, TR
MOLYBDENUM	----	----	----	----	----	----	----	----	----	MOLYBDENUM
NICKEL, TOT RECOVERABLE	0.0790	----	6.785	0.7116	----	53.418	0.9929078	43.045	6.785	NICKEL, TR
SELENIUM, TOTAL RECOVERABLE	0.0005	----	0.022	0.0020	----	0.076	2.4305556	105.369	0.022	SELENIUM, TR
SILVER, TOT RECOVERABLE	----	----	----	0.0075	----	0.286	----	----	0.286	SILVER, TR
ZINC, TOT RECOVERABLE	0.1797	----	23.601	0.1782	----	20.471	14.8936170	645.67	20.471	ZINC, TR

DOMESTIC	DATA VALUE	Antimony	Arsenic	Cadmium	Chromium, Trivalent	Chromium, VI	Copper	Cyanide	Lead	Mercury	Molybdenum	Nickel	
	LIT VALUE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
		0.0010	0.0010	0.0030	0.0500	0.0000	0.0600	0.0400	0.0500	0.0000	0.0000	0.0200	
	DATA VALUE	Selenium	Silver	Zinc									
LIT VALUE	0.0000	0.0000	0.0000										
		0.0000	0.0100	0.1800									

TYPE OF TREATMENT =	2	Act Sludge	SLUDGE DISPOSAL	
TREATMENT INCLUDE NITIFICATION?	No		DOES THE POTW HAVE SECONDARY CLARIFICATION?	Yes
			AVERAGE TONS OF SLUDGE PER DAY (DRY WEIGHT)	1.3
			IS SLUDGE LAND APPLIED?	Yes
GROWTH ALLOCATION				
			% ALLOCATION RESERVED FOR FUTURE GROWTH =	10

PARAMETER	7) MAX WQ INSTREAM (LBS/D)	8) ALLOCATION FROM BACKGROUND (LBS/D)	9) ALLOWABLE DISC FROM POTW (LBS/D)	10) REMOVAL RATE (%)	11) ALLOWABLE DISCHARGE (WQ / HH) (LBS/D)	12) INHIBITION TRESHOLD CONC (MG/L)	13) ALLOWABLE DISCHARGE (INHIBITION) (LBS/D)	14) ALLOWABLE DISCHARGE (SLUDGE) (LBS/D)	15) ALLOWABLE DISCHARGE LOCAL LIMIT (LBS/D)	16) DOMESTIC INFLUENT LOADING (LBS/D)	17) INDUSTRIAL INFLUENT LOADING (LBS/D)	18) AVAILABLE CAPACITY FOR GROWTH (LBS/D)	LIMITING FACTOR
ANTIMONY, TOTAL RECOVERABLE	16.1847	0	16.1847	0	16.1847				16.1847	0.0162	0.0000	14.5517	WATER QUALITY
ARSENIC, TRIVALENT	0.0635	0.0186	0.0449	45	0.0816	0.100	1.6680	0.433333333	0.0816	0.0162	0.0000	0.0589	WATER QUALITY
CADMIUM, TOT RECOVERABLE	0.0637	0.0083	0.0554	67	0.1679	1.000	16.6800	0.329850746	0.1679	0.0486	0.0346	0.0763	WATER QUALITY
CHROMIUM, TOT RECOVERABLE	22.9430	2.796	20.1470	82	111.9278	5.000	83.4000	-----	83.4000	0.8093	0.8443	73.5718	INHIBITION
CHROMIUM, HEXAVALENT	0.4769	0	0.4769	83	2.8051	1.000	16.6800	-----	2.8051	0.0000	0.0000	2.5246	WATER QUALITY
COPPER, TOTAL RECOVERABLE	1.5271	0.1839	1.3432	86	9.5942	1.000	16.6800	13	9.5942	0.9712	1.0220	6.8409	WATER QUALITY
CYANIDE, FREE	0.2254	0.0412	0.1842	69	0.5943	0.100	1.6680	-----	0.5943	0.6475	0.0197	-0.0656	WATER QUALITY
LEAD, TOT RECOVERABLE	0.9036	0.0968	0.8068	61	2.0686	1.000	16.6800	3.580327869	2.0686	0.8093	0.0247	1.1112	WATER QUALITY
MERCURY, TOT RECOVERABLE	0.0017	0.0003	0.0014	60	0.0036	0.100	1.6680	0.247	0.0036	0.0000	0.0000	0.0032	WATER QUALITY
MOLYBDENUM		0						0.195	0.1950	0.0000	0.0000	-----	SLUDGE
NICKEL, TOT RECOVERABLE	6.7847	0.8159	5.9688	42	10.2911	1.000	16.6800	2.6	2.6000	0.3237	1.1751	0.9911	SLUDGE
SELENIUM	0.0217	0.004	0.0177	50	0.0354			0.52	0.0354	0.0000	0.0000	0.0318	WATER QUALITY
SILVER, TOT RECOVERABLE	0.2856	0.0255	0.2601	75	1.0403	0.250	4.1700	-----	1.0403	0.1619	0.0049	0.7861	WATER QUALITY
ZINC, TOT RECOVERABLE	20.4709	1.663	18.8079	79	89.5616	1.000	16.6800	24.6835443	16.6800	2.9135	0.7307	11.7322	INHIBITION

Comments

Item 1: Allowable concentration instream based on above noted stream conditions and state standard to protect aquatic life from chronic toxicity.

Item 2: Mass of pollutant allowed instream based on above noted stream conditions and chronic criteria calculated as shown below:

Item 2 = stream 7Q10 x 8.34 x Item 1. If stream segment is tidally influenced, the more stringent of freshwater and saltwater criteria is used.

Item 3: Allowable concentration instream based above noted stream conditions and state standard to protect aquatic life from acute toxicity.

Item 4: Mass of pollutant allowed instream based on above noted stream conditions and acute criteria and calculated as shown below:

Item 4 = stream 1Q10 x 8.34 x Item 3. For LWF streams, Item 4 = stream 7Q2 x 8.34 x Item 3.

If stream segment is tidally influenced, the more stringent of freshwater and saltwater criteria is used.

Item 5: Allowable concentration instream based on above noted stream conditions and state human health standard for a stream with this use classification.

Item 6: Mass of pollutant allowed instream based on above noted stream condition, the human health standard and calculated as shown below:

Item 6 = Annual average stream flow x 8.34 x Item 5 (for carcinogens) and 7Q10 x 8.34 x Item 5 (for non-carcinogens).

Item 7: The most stringent of the requirements calculated in Items 2,4 and 6.

Item 8: Amount allocated to other facilities discharging to this stream segment.

Item 9: Remaining allocation available.

Item 10: Pollutant removal rates based on the treatment process.

Item 11: The calculated allowable discharge into the POTW based on water quality and human health concerns.

Item 12: Concentration of pollutant that could cause inhibition of biological processes utilized at the treatment plant.

Item 13: Allowable discharge into the POTW based on levels to prevent inhibition of biological treatment processes.

Item 14: Allowable discharge into the POTW based on levels to meet EPA 503 standards for land application of sludge, if sludge is land applied.

Item 15: Allowable discharge into the POTW based on the more stringent of Items 11, Item 13 and item 14 requirements. This column contains the Local Limits for this POTW.

Item 16: Domestic influent (lbs/d) based on domestic flow and sampled domestic influent data if available or literature values if not.

Item 17: Industrial influent (lbs/d) based on monthly average permit limits and actual average values for the past 2 to 5 years (depending on availability) for "monitor only" pollutants as shown on SIUs sheet. Values reported as less than detect are not included in average calculation.

Item 18: Available capacity remaining for new sources after subtracting capacity being utilized by industrial sources, domestic sources (including commercial sources and septage disposal) and capacity reserved for future growth.

SIGNIFICANT INDUSTRIAL USERS

PERMITTEE	AVG FLOW (MGD)	DAILY AVG ANTIMONY (MG/L)	DAILY AVG ARSENIC (MG/L)	DAILY AVG CADMIUM (MG/L)	DAILY AVG CHROMIUM (MG/L)	DAILY AVG HEX CHROM (MG/L)	DAILY AVG COPPER (MG/L)	DAILY AVG CYANIDE (MG/L)	DAILY AVG LEAD (MG/L)	DAILY AVG MERCURY (MG/L)	DAILY AVG Molybdenum (mg/l)	DAILY AVG NICKEL (MG/L)	DAILY AVG SELENIUM (MG/L)	DAILY AVG SILVER (MG/L)	DAILY AVG ZINC (MG/L)
Harsco Ind (IU363700494)	0.0080	0.0000	0.0000	0.0700	1.7100	0.0000	2.0700	0.0400	0.0500	0.0000	0.0000	2.3800	0.0000	0.0100	1.4800
Hubbell Power Sys (IU363700933)	0.0012	0.0000	0.0000	0.0700	1.7100	0.0000	2.0700	0.0400	0.0500	0.0000	0.0000	2.3800	0.0000	0.0100	1.4800
M & B Hangers (IU363700932)	0.0500	0.0000	0.0000	0.0700	1.7100	0.0000	2.0700	0.0400	0.0500	0.0000	0.0000	2.3800	0.0000	0.0100	1.4800
Total Industrial flow	0.0592														

Monthly average permit limits are listed in bold print.

Other values are based on a minimum of 24 months of data if available as reported on DMRs (for parameters with testing requirements in permits).

PERMITTEE	AVG FLOW (MGD)	DAILY AVG ANTIMONY (LBS/D)	DAILY AVG ARSENIC (LBS/D)	DAILY AVG CADMIUM (LBS/D)	DAILY AVG CHROMIUM (LBS/D)	DAILY AVG HEX CHROM (LBS/D)	DAILY AVG COPPER (LBS/D)	DAILY AVG CYANIDE (LBS/D)	DAILY AVG LEAD (LBS/D)	DAILY AVG MERCURY (LBS/D)	DAILY AVG Molybdenum (LBS/D)	DAILY AVG NICKEL (LBS/D)	DAILY AVG SELENIUM (LBS/D)	DAILY AVG SILVER (LBS/D)	DAILY AVG ZINC (LBS/D)
Harsco Ind ((IU363700494)	0.008	0.0000	0.0000	0.0047	0.1141	0.0000	0.1381	0.0027	0.0033	0.0000	0.0000	0.1588	0.0000	0.0007	0.0987
Hubbell Power Sys (IU363700933)	0.0012	0.0000	0.0000	0.0007	0.0171	0.0000	0.0207	0.0004	0.0005	0.0000	0.0000	0.0238	0.0000	0.0001	0.0148
M & B Hangers (IU363700932)	0.05	0.0000	0.0000	0.0292	0.7131	0.0000	0.8632	0.0167	0.0209	0.0000	0.0000	0.9925	0.0000	0.0042	0.6172
	0.0592	0.0000	0.0000	0.0346	0.8443	0.0000	1.0220	0.0197	0.0247	0.0000	0.0000	1.1751	0.0000	0.0049	0.7307

CURRENT PERMITTED INDUSTRIAL LOADING TO POTW (LBS/DAY)

PARAMETER	
ANTIMONY	0.0000
ARSENIC	0.0000
CADMIUM	0.0346
CHROMIUM	0.8443
HEX CHROM	0.0000
COPPER	1.0220
CYANIDE	0.0197
LEAD	0.0247
MERCURY	0.0000
Molybdenum	0.0000
NICKEL	1.1751
SELENIUM	0.0000
SILVER	0.0049
ZINC	0.7307