



Alabama Department of Environmental Management
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MARCH 25, 2019

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(334) 271-7700 ■ FAX (334) 271-7950

HONORABLE GARY DAVENPORT
TOWN OF ECLECTIC
145 MAIN STREET
ECLECTIC AL 36024

Re: DRAFT LOCAL LIMITS
TOWN OF ECLECTIC
ECLECTIC LAGOON & SPRAYFIELD
NPDES PERMIT NO. AL0067903

Dear Mayor Davenport:

The Alabama Department of Environmental Management (ADEM) is required by Administrative Rule 335-6-5-.03 to develop local limits for Publicly Owned Treatment Works (POTWs) receiving wastewater from significant industrial users which could adversely impact the operation or performance of the treatment works. These limits should prevent interference with the POTW collection/treatment system or cause sludge disposal concerns. Because many POTWs have modernized or expanded their treatment plants since the last issuance of local limits, ADEM is currently in the process of updating these requirements.

In this regard, ADEM has developed an updated draft local limits document for the Eclectic Lagoon & Sprayfield. A copy of this draft along with supporting information is attached for your review and comment. ADEM is requesting that your comments be received no later than 60 days from the date of this letter.

It should be noted that this draft is based on assumed levels of treatment and assumed levels of pollutants in domestic wastewater that may not reflect actual conditions at your facility. For this reason the Department encourages you to become involved with the local limits development process. Specifically, we are encouraging you to establish a sampling program to collect data that may be used to determine more site specific requirements. Requirements based on site specific information should ensure the protection of your plant's operation and could prevent the unnecessary reduction in permit limits for industrial sources and/or limit capacity for future growth.

If you are interested in establishing a program to collect this data prior to the final development of local limits, you should contact Scott Jackson at (334) 394-4366 within 30 days of the date of this letter to indicate your interest and to obtain specific guidance on proper sampling protocol. In addition a general guidance document for developing a sampling program is attached for your consideration. Should you choose to collect this data no further action will be taken on the attached draft until adequate time has been allowed for the submittal of sampling results.

ADEM rules also provide the opportunity for POTWs to reserve a portion of their hydraulic or treatment capacity for any pollutant. This initial draft assumed a reserved capacity of 10%. Please inform the Department if this assumption is consistent with current plans for future development. In addition we would appreciate your input on local issues such as other pollutants of concern that may be impacting your operation and that need to be addressed in the local limits program.



Following evaluation of any additional information provided, revised draft local limits will be developed. If your facility has no comments and does not wish to establish a sampling program, ADEM will proceed with the development of final local limits based on the attached draft. After consideration of any comments received during the public notice period, a final determination on the local limits will be made. All permits issued to industrial users must comply with adopted local limits.

Should you have any questions about this process, please contact Scott Jackson by email at scott.jackson@adem.alabama.gov or by phone at (334) 394-4366.

Sincerely,



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

Attachments: Draft Local Limits
Rationale for Local Limits
Local Limits/Pass Through Calculations
List of Significant Industrial Users
Sampling for Local Limit Development

CC: Madix Inc
Sandra Lee
Scott Jackson

LOCAL LIMITS

PUBLICLY OWNED TREATMENT WORKS: ECLECTIC LAGOON & SPRAYFIELD
LOCATION: ECLECTIC, ALABAMA
ELMORE COUNTY
PERMIT NUMBER: AL0067903

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 POTWs</u>
Arsenic, Trivalent	0.1668
Cadmium, Total Recoverable	1.668
Chromium, Total Recoverable	8.340
Copper, Total Recoverable	1.668
Cyanide, Free	0.1668
Lead, Total Recoverable	1.668
Mercury, Total Recoverable	0.1668
Nickel, Total Recoverable	1.668
Silver, Total Recoverable	0.4170
Zinc, Total Recoverable	1.668

HYDRAULIC LOADING:

The hydraulic loading limit on an average basis is the design capacity of the treatment plant which is 0.2 million gallons per day.

ORGANIC LOADING:

The organic loading limit (CBOD₅) is the design capacity of the treatment plant which is 279 pounds per day.

SOLIDS LOADING

The Total Suspended Solids loading limit (TSS) is the design capacity of the treatment plant which is 334 pounds per day.

EFFECTIVE DATE:

ISSUANCE DATE:

DRAFT

Alabama Department of Environmental Management

Rationale for Local Limits

Eclectic Lagoon & Sprayfield (AL0067903)
0.2 MGD Lagoon & Extended Aeration package plant
Eclectic/Elmore County

Reissuance
Prepared Date: 2/26/2019
Prepared By: Ed Hughes

Nonconventional Pollutants:

Pass Through:

Allowable pollutant loadings based on protection of state water quality stream standards is not a concern for this site because treated wastewater is not discharged to a surface water of the state. The POTW has a lagoon system and an extended aeration package system. The system is designed to send 50% of the wastewater to each system. Following treatment by one of the two systems, the wastewater is blended in the two polishing ponds then routed to the spray field for land application. Local limits did not take into consideration the possibility of pollutants entering groundwater in the area of the spray fields because the system is designed to attenuate the pollutants of concern in the soil preventing groundwater contamination.

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 1 of the LL-PT spreadsheet.

Sludge Disposal:

The POTW retains sludge in the on-site aeration basin. 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 3 of the spreadsheet.

Column 4 of the LL-PT spreadsheet indicates the most stringent of the applicable 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 5 and current industrial loadings are shown in column 6 (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 Users sheet). Column 7 of that spreadsheet shows the remaining capacity after subtracting the current loadings. Negative values indicate that no additional capacity is available for these pollutants.

It should be noted that the available pollutant loadings shown in column 7 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 limit is the design capacity of the treatment works as indicated by the POTW, 0.2 MGD (0.1 MGD – aerated lagoon, 0.1 MGD – extended aeration package plant) .

Organic loading:

The organic loading limit (CBOD₅) is the design capacity of the treatment works. 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 treatment works 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.

LOCAL LIMIT/ PASS THROUGH CALCULATIONS

POTW NAME: Eclectic Lagoon & Sprayfield
 NPDES PERMIT NUMBER: AL0067903

DATE PREPARED: 2/26/2019
 PREPARED BY: Ed Hughes

STREAM DATA AND POTW FLOW DATA									
RECEIVING STREAM CLASSIFICATION	=	F & W	0		RECEIVING STREAM TIDALLY INFLUENCED =		No		
POTW DESIGN FLOW	=		0.2	MGD					
FLOW FROM OTHER CONTRIBUTORS	=			MGD					
DOMESTIC FLOW	=		0.1915	MGD					
7Q10	=			CFS	OR		0.00	MGD	
1Q10	=			CFS	OR		0.00	MGD	
7Q2	=			CFS	OR		0.00	MGD	
ANNUAL AVG FLOW	=			CFS	OR		0.00	MGD	
STREAM HARDNESS (DEFAULT VALUE 100)	=		N/A	MG/L AS CaCO3					

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

TYPE OF TREATMENT =	1	Primary
TREATMENT INCLUDE NITIFICATION?	No	

SLUDGE DISPOSAL	
DOES THE POTW HAVE SECONDARY CLARIFICATION?	No
AVERAGE TONS OF SLUDGE PER DAY (DRY WEIGHT)	N/A
IS SLUDGE LAND APPLIED?	No

GROWTH ALLOCATION	
% ALLOCATION RESERVED FOR FUTURE GROWTH =	10

PARAMETER	1) INHIBITION	2) ALLOWABLE	3) ALLOWABLE	4) ALLOWABLE	5) DOMESTIC	6) INDUSTRIAL	7) AVAILABLE	LIMITING FACTOR
	TRESHOLD	DISCHARGE	DISCHARGE	DISCHARGE	INFLUENT	INFLUENT	CAPACITY	
	CONC (MG/L)	(INHIBITION) (LBS/D)	(SLUDGE) (LBS/D)	LOCAL LIMIT (LBS/D)	LOADING (LBS/D)	LOADING (LBS/D)	FOR GROWTH (LBS/D)	
ANTIMONY, TOT RECOVERABLE				0.0000	----	0.0000	0.0000	-----
ARSENIC, TRIVALENT	0.100	0.1668	-----	0.1668	0.0016	0.0000	0.1487	INHIBITION
CADMIUM, TOT RECOVERABLE	1.000	1.6680	-----	1.6680	0.0048	0.0050	1.4924	INHIBITION
CHROMIUM, TOT RECOVERABLE	5.000	8.3400	-----	8.3400	0.0799	0.1212	7.3250	INHIBITION
CHROMIUM, HEXAVALENT	1.000	1.6680	-----	1.6680	0.0000	0.0000	1.5012	INHIBITION
COPPER, TOTAL RECOVERABLE	1.000	1.6680	-----	1.6680	0.0958	0.1467	1.2829	INHIBITION
CYANIDE, FREE	0.100	0.1668	-----	0.1668	0.0639	0.0177	0.0767	INHIBITION
LEAD, TOT RECOVERABLE	1.000	1.6680	-----	1.6680	0.0799	0.0305	1.4019	INHIBITION
MERCURY, TOT RECOVERABLE	0.100	0.1668	-----	0.1668	0.0000	0.0000	0.1501	INHIBITION
MOLYBDENUM			-----	0.0000	0.0000	0.0000	-----	-----
NICKEL, TOT RECOVERABLE	1.000	1.6680	-----	1.6680	0.0319	0.0709	1.4087	INHIBITION
SELENIUM			-----	0.0000	0.0000	0.0000	0.0000	-----
SILVER, TOT RECOVERABLE	0.250	0.4170	-----	0.4170	0.0160	0.0170	0.3456	INHIBITION
ZINC, TOT RECOVERABLE	1.000	1.6680	-----	1.6680	0.2875	0.1049	1.1480	INHIBITION

Comments

Item 1: Concentration of pollutant that could cause inhibition of biological processes utilized at the treatment plant.

Item 2: Allowable discharge into the POTW based on levels to prevent inhibition of biological treatment processes.

Item 3: Allowable discharge into the POTW based on levels to meet EPA 503 standards for land application of sludge, if sludge is land applied.
Not applicable to this site because the POTW retains sludge in the on-site aeration basin.

Item 4: Allowable discharge into the POTW. This column contains the Local Limits for this POTW.

Item 5: Domestic influent (lbs/d) based on domestic flow and sampled domestic influent data if available or literature values if not.

Item 6: 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 7: 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)
Madix Inc (IU342600170)	0.0085	0.0000	0.0000	0.0700	1.7100	0.0000	2.0700	0.2500	0.4300	0.0000	0.0000	1.0000	0.0000	0.2400	1.4800
Total Industrial flow	0.0085														

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)
Madix Inc (IU342600170)	0.0085	0.0000	0.0000	0.0050	0.1212	0.0000	0.1467	0.0177	0.0305	0.0000	0.0000	0.0709	0.0000	0.0170	0.1049
	0.0085	0.0000	0.0000	0.0050	0.1212	0.0000	0.1467	0.0177	0.0305	0.0000	0.0000	0.0709	0.0000	0.0170	0.1049

CURRENT PERMITTED INDUSTRIAL LOADING TO POTW (LBS/DAY)

PARAMETER	
ANTIMONY	0.0000
ARSENIC	0.0000
CADMIUM	0.0050
CHROMIUM	0.1212
HEX CHROM	0.0000
COPPER	0.1467
CYANIDE	0.0177
LEAD	0.0305
MERCURY	0.0000
Molybdenum	0.0000
NICKEL	0.0709
SELENIUM	0.0000
SILVER	0.0170
ZINC	0.1049

SAMPLING FOR LOCAL LIMIT DEVELOPMENT

Local limits developed utilizing site specific data will more accurately achieve the following:

- Identify Pollutants of Concern (POCs) that could adversely impact the operation of the treatment works, affect water quality in the receiving stream or limit the sludge disposal method utilized by the POTW.
- Determine the headworks capacity for each POC such that the POTW can make decisions regarding pollutant loadings allocation among industrial sources.
- Allow the POTW to make informed decisions regarding reserving pollutant loading for future growth.

For POTWs that desire to have more involvement with the local limit development process, ADEM encourages the collection of site specific data. This may be of particular importance for sites where calculated loadings will be restrictive on future growth and where the POTW believes assumed values in the ADEM Local Limits/Pass Through (LL-PT) spreadsheet do not correctly reflect the actual conditions at the site. For these cases, samples can be collected and analyzed by the POTW in accordance with a sampling plan developed by the POTW that can include the following items:

SAMPLING SITES

- POTW Influent - Influent sampling provides data to be used in calculating POTW-specific removal efficiencies. The sample should be collected from a location that allows for the collection of untreated wastewater before it is mixed with any waste streams returned to the headworks from operations within the POTW. Without site specific data, assumed values may be utilized.
- POTW Effluent - Sampling the treatment works' effluent is essential to determining the POTW's overall removal efficiency. Samples taken to demonstrate compliance with the POTW's NPDES permit can be used for this purpose.
- Collection System - In order to measure pollutant loadings from unregulated (domestic and commercial) sources, samples from a point within the collection system that isolates these sources would provide data regarding domestic/commercial pollutant loading.
- Receiving Stream – When available, the instream Hardness (measured as CaCO₃) upstream of the discharge is typically used to determine the water quality criteria for some metal pollutants. Stream Hardness affects the loading of these POCs in the POTW's effluent and based on treatment removal rates determines the loading into the POTW headworks. Without site specific instream Hardness data, an assumed value may be utilized.

SAMPLING METHODS

- Sampling should occur on dates that are representative of typical loadings to the POTW and normal treatment works operations.
- 24-hour, flow-proportioned composite samples are the most accurate for generating the data. This sampling technique should be used whenever feasible for all pollutants except those that require grab samples (e.g. Cyanide).

- ADEM suggests 7 to 15 consecutive days of sampling for influent and effluent and 7 consecutive days for collection system data. Fewer sampling days may be appropriate in some cases. This should be discussed with your ADEM Industrial Section area engineer.
- If possible, an effluent sample should be collected at the appropriate time following the collection of the associated influent sample to account for the retention period in the POTW.
- Sampling for instream Hardness should be performed upstream of the discharge point. If possible, sampling should be performed during lower stream flow conditions that typically occur during the late August to early November time period.

ANALYTICAL METHODS

- Approved analytical methods found at 40 CFR Part 136 should be used in the development of local limits. The POTWs should use approved sufficiently sensitive methods (e.g. if there is no detection of the pollutant then a test method with the lowest detection level should be utilized).
- Regarding metals and Cyanide analyses, metals can be analyzed as “Total Recoverable” using EPA Method 200.8. Cyanide can be analyzed using EPA Method 335.4. Other methods may be appropriate if approved by ADEM.

OTHER CONSIDERATIONS

POTWs should not sample during or after periods of heavy rainfall when I&I is also high. Flows at these times may be diluted, and may not be representative of typical residential and commercial flow.

It would be useful to utilize data collected and analyzed over various seasons if available. However, to expedite the development of local limits more rapid data collection and analysis may be appropriate.