



ARKANSAS  
Department of Environmental Quality

September 30, 2011

James Carlock  
Wastewater Superintendent  
Osceola Wastewater  
P.O. Box 443  
Osceola, AR 72370

Re: Osceola’s (NPDES #AR0021580; AFIN #47-00956) Maximum Allowable Industrial Loadings/Allocation System

Mr. Carlock,

As per our telephone conversations on 9/26/11 and requested by the City, the safety (reserve or growth) factor in the previous Maximum Allowable Headworks Loadings’ (MAHLs) spreadsheet has been increased from 10% to 25% thus lowering your Maximum Allowable Industrial Loadings (MAILs). EPA’s guidance mentions a minimum safety factor of 10%. Some cities in Arkansas have chosen a safety factor of 25% which is also acceptable.

The major pollutant in focus is Zinc. As shown in the new spreadsheet (see attachment), the adjusted MAIL is now reduced to 4.42 lbs/day from 5.86 lbs/day Zinc.

Further conversations indicated the City would prefer to allocate this Zinc loading using a concentration limit based-on-contributory-flow method (EPA guidance option).

Using that formula in calculating a Zinc “Local Limit” for Actagro, the fertilizer facility discharging into the City’s sewage collection system produces the following:

$$C_{LIM} = \frac{L_{ALL}}{8.34 \times Q_{CONT}}$$

Where:

$C_{LIM}$  = Concentration Limit (mg/l)

$L_{ALL}$  = MAIL = 4.42 lbs/day

8.34 = Conversion factor

$Q_{CONT}$  = Actagro’s (maximum anticipated future) contributory flow of 0.005 MGD.

Actagro’s “Local Limit” for Zinc would equal 106 mg/l.

Considering Actagro's "maximum anticipated future flow" is 0.005 MGD, it represents approximately 0.002% of the wastewater plant's average daily flow of 2.3 MGD.

The City may accept this office's calculations or consult with an outside firm regarding Actagro's Local Limit.

If there are further questions or comments please feel free to contact this office.

Sincerely,

A handwritten signature in cursive script that reads "Allen Gilliam".

Allen Gilliam  
ADEQ State Pretreatment Coordinator  
501.682.0625

Attachment: Adjusted (9/26/11) MS Excel Spreadsheet

E:\NPDES\NPDES\Pretreatment\Report

**Osceola 9/11**

Pollutant	% Rem***	Water Quality mg/l	Water Quality lbs/day	Sludge* mg/kg	Sludge lbs/day	****Inhibition** mg/l	****Inhibition** lbs/day	****Inhibition** mg/l	****Inhibition** lbs/day	MAHL lbs/day	MAHL mg/l	MAHC lbs/day	MAHC mg/l	Domestic Allocation for %SF lbs/day	MAIL lbs/day	Max Inf Exceedec MAHC	Max Eff vs WQS(mg/l)
Cadmium Total	67	30.7379	1786.7130	85	0.00	1.00	19.18	1.00	19.18	19.182	1.000	0.09	1.000	14.387	14.292	No	No
Copper Total	87	137.5713	20299.1789	4300	0.00	1.00	19.18	1.00	19.18	19.182	1.000	0.54	1.000	14.387	13.843	No	No
Lead Total	58	90.1290	4116.3209	840	0.00	1.00	19.18	1.00	19.18	19.182	1.000	0.06	1.000	14.387	14.328	No	No
Mercury Total	82	0.10316	10.9936	57	0.00	0.10	1.92	0.10	1.92	1.918	0.100	0.0019	0.100	1.439	1.437	No	No
Nickel Total	42	2485.4967	82201.3753	420	0.00	1.00	19.18	1.00	19.18	19.182	1.000	0.85	1.000	14.387	13.538	No	No
Selenium Total	50	42.9842	1649.0466	100	0.00	0.20	3.84	0.20	3.84	3.836	0.200	0.02	0.200	2.877	2.858	No	No
Silver Total	74	27.6619	2040.8076	0	0.00	0.25	4.80	0.25	4.80	4.796	0.250	0.19	0.250	3.597	3.408	No	No
Zinc Total	88	1129.2312	180507.6140	7500	0.00	0.50	9.59	0.50	9.59	9.591	0.500	2.77	0.500	7.193	4.423	No	No
Chromium Tote	82	6292.3933	670559.3838	3000	0.00	1.00	19.18	1.00	19.18	19.182	1.000	0.45	1.000	14.387	13.934	No	No
Cyanide Total	69	44.7036	2766.1428	0	0.00	0.10	1.92	0.10	1.92	1.918	0.100	0.08	0.100	1.439	1.363	No	No
Arsenic	45	2346.5013	81837.4336	75	0.00	0.10	1.92	0.10	1.92	1.918	0.100	0.47	0.100	1.439	0.967	No	No
Molybdenum	6	0.0000	0.0000	75	0.00	0.20	3.84	0.20	3.84	3.836	0.200	0.08	0.200	2.877	2.802	No	No
Beryllium	50	45.563274	1747.9894	0	0.00	0.10	1.92	0.10	1.92	1.9182	0.100	0.01	0.100	1.439	1.433	No	No

Dry tons/day of sludge [0.00] Safety Factor [0.25]

[All conversions from mg/l to lbs/day used the City's avg. flow (2.3 MGD) from 1/1/2010 to 7/31/2011]

\*\* Page 3-44 of EPA Guidance Mtrl. (Be est. @ 0.10 mg/l)

\*\*\* EPA Default Numbers from page 3-56 of TBLL guidance manual except for Cu, Pb, Hg, Ag, Zn & Mo. (Be & Se est. @ 50%; Hg est. @ 95%)

\*\*\*\* lbs/day = dry tons/day \* 0.002 \* CFR 503 criteria/ % removal from EPA Pret. Prog. Implementation workshop mtrl. ~ 6/93

^^ lbs/day = mg/l \* Flow \* 8.34

^ lbs/day = (1 - SF) \* MAHL

MAHL = Maximum Allowable Headworks Loading

MAHC = Maximum Allowable Headworks Concentration

MAIL = Maximum allowable industrial loading = MAHL - Allocation for % SF - Domestic lbs/day