



Department of  
Public Works

4/12/2018

Pretreatment Department

Randy Reese

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Certified mail#70101870000239833282

To: Leslie Allen-Daniels  
5301 Northshore Dr.  
North Little Rock, AR 72118

Re: 2017 Sludge Application & Soil Analysis Report

Please find enclosed the original and one copy of the 2017 Sludge Application and Soil Analysis Report. All other recipients one copy enclosed.

If you have any questions or require any additional information, please feel free to contact me at 870-741-5527 or [kathryn.catlin@cityofharrison.com](mailto:kathryn.catlin@cityofharrison.com).

Sincerely,

Kathryn Catlin

Wastewater Systems Manager

Cc: ADEQ, Katherine Yarberry #70101870000239833305  
EPA Region 6 #70101870000239833312  
Charles Meyers, Land Owner #70101870000239833329  
Meredith Miller, Land Owner #70101870000239833299











City of Harrison, Arkansas - Permit # 5158-W 2017 Monthly Sludge Application Records in Wet Tons

June	1A	1B	1C	3A	3B	4A	4B	4C	4D	4E	4F	5A	6B	6C	6D	6E	6F	7A	7B	7D	8	9
1																		6.3				
2																						
3																						
4																						
5																						
6																						
7																			7.35			
8																			6.3			
9																			6.3			
10																						
11																						
12																						
13																						
14																			8.4			
15																		6.3				
16																		5.25				
17																						
18																						
19																						
20																						
21																			8.4			
22																						
23																			7.35			
24																						
25																						
26																						
27																			8.4			
28																		6.3				
29																		8.4				
30																		8.4				
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	52.5	0	0	0
Avg																		6.8	7.5			
Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.4	8.4	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.25	6.3	0	0	0

City of Harrison, Arkansas - Permit # 5158-W 2017 Monthly Sludge Application Records in Wet Tons

July	1A	1B	1C	3A	3B	4A	4B	4C	4D	4E	4F	5A	6B	6C	6D	6E	6F	7A	7B	7D	8	9	
1																							
2																							
3																							
4																							
5				5.25																			
6				7.35																			
7																							
8																							
9																							
10																							
11																			6.3				
12																		3.15					
13																							
14																			8.4				
15																							
16																							
17																							
18																		9.98					
19																	5.25						
20																			7.35				
21																			4.2				
22																							
23																							
24																							
25												6.3											
26												8.4											
27												5.25											
28																							
29																							
30																							
31																							
Total	0	0	0	12.6	0	0	0	0	0	0	0	20	0	0	0	0	0	18.4	26.3	0	0	0	
Avg				6.3								6.7						6.1	6.6				
Max	0	0	0	7.35	0	0	0	0	0	0	0	8.4	0	0	0	0	0	9.98	8.4	0	0	0	
Min	0	0	0	5.25	0	0	0	0	0	0	0	5.25	0	0	0	0	0	3.15	4.2	0	0	0	





City of Harrison, Arkansas - Permit # 5158-W 2017 Monthly Sludge Application Records in Wet Tons

September	1A	1B	1C	3A	3B	4A	4B	4C	4D	4E	4F	5A	6B	6C	6D	6E	6F	7A	7B	7D	8	9	
1																							
2																							
3																							
4																							
5																	9.45						
6																	8.4						
7					9.98																		
8																							
9																							
10																							
11																	5.25						
12		9.45																					
13		8.4																					
14																							
15		9.45																					
16																							
17																							
18																							
19				10.3																			
20																							
21														7.35									
22														5.25									
23																							
24																							
25																6.3							
26																9.45							
27																8.4							
28																7.35							
29																							
30																							
Total	0	27.3	0	10.3	9.98	0	0	0	0	0	0	0	0	44.1	0	23.1	0	0	0	0	0	0	0
Avg		9.1		10.3	10.0									7.4		7.7							
Max	0	9.45	0	10.3	9.98	0	0	0	0	0	0	0	0	9.45	0	9.45	0	0	0	0	0	0	0
Min	0	8.4	0	10.3	9.98	0	0	0	0	0	0	0	0	5.25	0	5.25	0	0	0	0	0	0	0





City of Harrison, Arkansas - Permit # 5158-W 2017 Monthly Sludge Application Records in Wet Tons

December	1A	1B	1C	3A	3B	4A	4B	4C	4D	4E	4F	5A	6B	6C	6D	6E	6F	7A	7B	7D	8	9	
1													9.45										
2																							
3																							
4													9.98										
5													6.3										
6													8.4										
7													7.35										
8																							
9																							
10																							
11																							
12													6.3										
13													5.25										
14													4.2										
15													7.35										
16																							
17																							
18													8.4										
19													6.3										
20													9.45										
21																							
22																							
23																							
24																							
25																							
26																							
27																							
28										8.4													
29										9.45													
30																							
31																							
<b>Total</b>	0	0	0	0	0	0	0	0	0	17.9	0	0	88.7	0	0	0	0	0	0	0	0	0	0
<b>Max</b>	0	0	0	0	0	0	0	0	0	9.45	0	0	9.98	0	0	0	0	0	0	0	0	0	0
<b>Tons Applied</b>	19	27.3	0	94.3	80.9	25.2	59.9	35.7	0	17.9	70.4	172	134	92.4	34.7	23.1	0	59.3	78.8	0	13.7	0	1037.8
<b>DT/Acre/Year</b>	0.09	0.05		0.90	0.54	0.13	0.38	0.40		0.09	0.23	0.41	0.47	0.46	0.14	0.06		0.22	0.62		0.03		5.2
<b>Acres</b>	27	75	17	14	20	26	21	12	30	25	41	56	38	27	32	55	21	36	17	12	68	5	675.0
<b>DT/Year</b>	2.53	3.63	0	12.5	10.8	3.35	7.96	4.75	0	2.37	9.36	22.8	17.8	12.3	4.61	3.07	0	7.89	10.5	0	1.82	0	138.0
<b>DMT/Year</b>	2.29	3.29	0	11.4	9.76	3.04	7.22	4.31	0	2.15	8.49	20.7	16.2	11.1	4.18	2.79	0	7.16	9.5	0	1.65	0	125.2

**Harrison, Arkansas Permit # 5158-W  
Wastewater Treatment Plant  
Annual Report of Sludge Management Plan  
Biosolids Analysis for 2017 Land Application Report**

Analysis	Reporting Units	Results	Maximum Limit	
Total Kjeldahl Nitrogen	mg/Kg	36800	Report	
Ammonia Nitrogen	mg/Kg	3750	Report	
Nitrate Nitrogen	mg/Kg	7.52	Report	
Nitrite Nitrogen *	mg/Kg	7.52	Report	
Total Phosphorus	mg/Kg	21600	Report	
Calcium**	meq/l	895	Report	
Magnesium **	meq/l	124	Report	
Sodium **	meq/l	28	Report	
Total Potassium	mg/Kg	2140	Report	
Sodium Adsorption Ratio (SAR)	$Na^+ / [(Ca^{2+} + Mg^{2+})/2]^{1/2}$	0.04	Report	
Percent Total Solids	%	13.30%	Report	
pH	S.U.	7.10	Report	
			<b>LIMITS FROM PERMIT</b>	
<b>Analysis</b>	<b>Reporting Units</b>	<b>Results</b>	<b>Ceiling Concentration mg/kg</b>	<b>Cumulative Pollutant Loading Rate lb/ac</b>
Arsenic *	mg/Kg	7.52	75	37
Cadmium	mg/Kg	1.98	85	35
Copper	mg/Kg	515	4300	270
Lead	mg/Kg	35	840	270
Mercury	mg/Kg	2.49	57	15
Molybdenum	mg/Kg	10.20	75	Report
Nickel	mg/Kg	111	420	378
Selenium*	mg/Kg	9.10	100	90
Zinc	mg/Kg	1410	7500	2520
PCBs*	mg/Kg	0.541	50	NA

\* Parameter values were reported by the laboratory as < values

\*\* Laboratory reported as ppm dry and converted to meq/l (Ca 17900 x .05, Mg 1490 x .0833, Na 643 x .04348)

\*\*\* Laboratory reported as 648 µg/l

Field No.	Sludge Applied dry tons/ acre	Arsenic		Cadmium		Copper		Lead		Mercury		Molybdenum		Nickel	
		mg/kg	Total lb/ac/y ear	mg/kg	Total lb/ac/ year	mg/kg	Total lb/ac/y ear	mg/kg	Total lb/ac/ year	mg/kg	Total lb/ac/ year	mg/kg	Total lb/ac/ year	mg/kg	Total lb/ac/ year
1A	0.09	7.52	0.00	1.98	0.00	515	0.10	35.00	0.01	2.49	0.00	10.20	0.00	111.0	0.02
1B	0.05	7.52	0.00	1.98	0.00	515	0.05	35.00	0.00	2.49	0.00	10.20	0.00	111.0	0.01
1C															
2E															
2F															
3A	0.90	7.52	0.01	1.98	0.00	515	0.92	35.00	0.06	2.49	0.00	10.20	0.02	111.0	0.20
3B	0.54	7.52	0.01	1.98	0.00	515	0.55	35.00	0.04	2.49	0.00	10.20	0.01	111.0	0.12
4A	0.13	7.52	0.00	1.98	0.00	515	0.13	35.00	0.01	2.49	0.00	10.20	0.00	111.0	0.03
4B	0.38	7.52	0.01	1.98	0.00	515	0.39	35.00	0.03	2.49	0.00	10.20	0.01	111.0	0.08
4C	0.40	7.52	0.01	1.98	0.00	515	0.41	35.00	0.03	2.49	0.00	10.20	0.01	111.0	0.09
4D															
4E	0.09	7.52	0.00	1.98	0.00	515	0.10	35.00	0.01	2.49	0.00	10.20	0.00	111.0	0.02
4F	0.23	7.52	0.00	1.98	0.00	515	0.24	35.00	0.02	2.49	0.00	10.20	0.00	111.0	0.05
5	0.41	7.52	0.01	1.98	0.00	515	0.42	35.00	0.03	2.49	0.00	10.20	0.01	111.0	0.09
6B	0.47	7.52	0.01	1.98	0.00	515	0.48	35.00	0.03	2.49	0.00	10.20	0.01	111.0	0.10
6C	0.46	7.52	0.01	1.98	0.00	515	0.47	35.00	0.03	2.49	0.00	10.20	0.01	111.0	0.10
6D	0.14	7.52	0.00	1.98	0.00	515	0.15	35.00	0.01	2.49	0.00	10.20	0.00	111.0	0.03
6E	0.06	7.52	0.00	1.98	0.00	515	0.06	35.00	0.00	2.49	0.00	10.20	0.00	111.0	0.01
6F															
7A	0.22	7.52	0.00	1.98	0.00	515	0.23	35.00	0.02	2.49	0.00	10.20	0.00	111.0	0.05
7B	0.62	7.52	0.01	1.98	0.00	515	0.63	35.00	0.04	2.49	0.00	10.20	0.01	111.0	0.14
7D															
8	0.03	7.52	0.00	1.98	0.00	515	0.03	35.00	0.00	2.49	0.00	10.20	0.00	111.0	0.01
9															
10															
Total	5.20		0.078		0.0206		5.351		0.36		0.026		0.106		1.153
Conv Factor			1.21		1.21		1.21		1.21		1.21		1.21		1.21
kg/ha			0.095		0.0249		6.475		0.44		0.031		0.1282		1.396

Field No.	Selenium		Zinc		PCBs		Total Solids %	pH SU	Nitrate Nitrogen mg/kg	Nitrite Nitrogen mg/kg	Ammonia Nitrogen mg/kg	Total Kjeldahl Nitrogen mg/kg	Total Phosphorus mg/kg
	mg/kg	Total lb/ac/year	mg/kg	Total lb/ac/ear	mg/kg	Total lb/ac/ear							
1A	9.10	0.00	1410	0.26	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
1B	9.10	0.00	1410	0.14	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
1C													
2E													
2F													
3A	9.10	0.02	1410	2.53	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
3B	9.10	0.01	1410	1.52	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
4A	9.10	0.00	1410	0.36	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
4B	9.10	0.01	1410	1.07	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
4C	9.10	0.01	1410	1.12	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
4D													
4E	9.10	0.00	1410	0.27	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
4F	9.10	0.00	1410	0.64	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
5	9.10	0.01	1410	1.15	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
6B	9.10	0.01	1410	1.32	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
6C	9.10	0.01	1410	1.28	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
6D	9.10	0.00	1410	0.41	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
6E	9.10	0.00	1410	0.16	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
6F													
7A	9.10	0.00	1410	0.62	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
7B	9.10	0.01	1410	1.74	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
7D													
8	9.10	0.00	1410	0.08	0.54	0.00	13.30%	7.10	7.52	7.52	3750	36800	21600
9													
10													
Total	0.095		14.65		0.006								
Conv Factor	1.21		1.21		1.21								
kg/ha	<b>0.114</b>		<b>17.73</b>		<b>0.007</b>								



Field No.	Total Potassium	Magnesium	Sodium	Calcium	Sodium Absorption Ratio
	mg/kg	mg/kg	mg/kg	mg/kg	
1A	2140	124	28	895	0.000034
1B	2140	124	28	895	0.000034
1C					
2E					
2F					
3A	2140	124	28	895	0.000034
3B	2140	124	28	895	0.000034
4A	2140	124	28	895	0.000034
4B	2140	124	28	895	0.000034
4C	2140	124	28	895	0.000034
4D					
4E	2140	124	28	895	0.000034
4F	2140	124	28	895	0.000034
5	2140	124	28	895	0.000034
6B	2140	124	28	895	0.000034
6C	2140	124	28	895	0.000034
6D	2140	124	28	895	0.000034
6E	2140	124	28	895	0.000034
6F					
7A	2140	124	28	895	0.000034
7B	2140	124	28	895	0.000034
7D					
8	2140	124	28	895	0.000034
9					
10					
Total					
Conv Factor					
kg/ha					

Field No.	Total Volume of Waste Applied	Nitrogen Application Rate for Fields	Plant Available Nitrogen (PAN)	
	gal/acre/year	lbs N/acre/ year	mg/kg	lbs/Dry Ton (DT)
1A	838	138	11,805	23.61
1B	3	138	11,805	23.61
1C				
2E				
2F				
3A	1,616	138	11,805	23.61
3B	970	138	11,805	23.61
4A	233	138	11,805	23.61
4B	684	138	11,805	23.61
4C	714	138	11,805	23.61
4D				
4E	240	138	11,805	23.61
4F	95	138	11,805	23.61
5	86	138	11,805	23.61
6B	-	138	11,805	23.61
6C	-	138	11,805	23.61
6D	-	138	11,805	23.61
6E	101	138	11,805	23.61
6F				
7A	395.5	138	11,805	23.61
7B	1,112	138	11,805	23.61
7D				
8	48	138	11,805	23.61
9				
10				

Total	138 lb/acre
Conv Factor	
kg/ha	

**Harrison, Arkansas Permit # 5158-W  
Wastewater Treatment Plant  
Annual Report of Sludge Management Plan  
Fecal Coliform MPN per Gram of Total Solids\***

<b>2017</b>	<b>Quarter 1</b>	<b>Quarter 2</b>	<b>Quarter 3</b>	<b>Quarter 4</b>
<b>Sample No.</b>	MPNs per gram per total solids	MPNs per gram per total solids	MPNs per gram per total solids	MPNs per gram per total solids
1	33000	14,000	350,000	27,000
2	33000	4,000	33,000	14,000
3	17000	4,000	220,000	4,000
4	27000	27,000	33,000	17,000
5	33000	17,000	27,000	27,000
6	17000	4,000	33,000	14,000
7	33000	17,000	33,000	4,000
<b>Geometric Mean</b>	26,531	9,502	58,921	12,140

**SPECIFIC OXYGEN UPTAKE RATE\*\***

<b>2017</b>	<b>Quarter 1</b>	<b>Quarter 2</b>	<b>Quarter 3</b>	<b>Quarter 4</b>
	mg/g/h	mg/g/h	mg/g/h	mg/g/h
SOUR	0.5150	0.3859	0.7295	0.6855

\*Fecal Coliform MPN per gram of total solids. 503.32(b)(2)Alternative 1. (i) Seven representative samples of the sewage sludge that is used or disposed shall be collected. (ii) The geometric mean of the density of fecal coliform in the samples collected in paragraph (b)(2)(i) of this section shall be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis).

\*\*The method of determining that the vector attraction reduction is met: 503.33(b)(4) The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius.

Harrison, Arkansas Permit # 5158-W  
Wastewater Treatment Plant  
Annual Report of Sludge Management Plan  
2017 Soil Analysis

Harrison, Arkansas Permit # 5158-W  
Wastewater Treatment Plant  
Annual Report of Sludge Management Plan  
2017 Soil Analysis

(See note below for these parameters)

Field No.	Electric Conductivity (Micromhos/cm)	CEC (meq/100g)	Sodium Adsorption Ratio	Calcium	Magnesium	Sodium	Nitrate-Nitrogen	Phosphorus	Potassium	pH	Arsenic	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Zinc
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	(SU)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1A	0.86	11.5	0.105	4180	584	<125	6.67	367	806	7.2	<5.00	<0.500	15	23.7	0.134	<1.25	11.1	<5.00	50.5
1B-1	0.87	13.2	0.122	4300	362	<25.0	26.2	1030	556	6.7	3.87	0.154	5.12	18.8	0.0448	0.549	5.48	<1.39	19.1
1B-2	0.86	13.2	0.121	4940	384	<25.0	25.3	1470	591	6.7	3.87	0.154	5.12	18.8	0.0448	0.549	5.48	<1.39	19.1
1C**																			
2E**																			
2F**																			
3A	0.5	13.5	0.202	2500	409	<25.0	22.3	587	499	6.1	3.28	0.136	4.09	16.8	0.0273	0.370	5.15	<1.00	18.5
3B	0.73	18.4	0.073	7490	569	<25.0	34.2	724	726	6.8	3.07	0.234	9.4	23.1	0.100	0.507	7.67	<1.00	32.3
4A	0.80	13	0.130	2560	350	<25.0	8.16	942	705	6.7	<5.00	<0.500	10.7	18.5	0.100	<1.25	5.57	<5.00	36.4
4B	0.48	9.8	0.164	2320	306	<25.0	6.22	599	529	6.8	<5.00	<0.500	6.69	20.1	0.0565	<1.25	8.65	<5.00	27.4
4C	0.9	10.6	0.097	4400	340	<25.0	6.52	752	491	7.1	<5.00	<0.500	7.88	23.1	0.0729	<1.25	7.66	<5.00	32.2
4D	0.45	9.2	0.121	1800	316	<25.0	5.7	179	434	6.8	2.47	0.159	4.19	14	0.0531	0.351	5.69	<1.00	19.3
4E	0.61	9.7	0.125	1870	307	<25.0	3.56	484	408	6.6	2.09	0.132	6.14	11.5	0.130	0.269	3.40	<1.00	21.8
4F-1	0.79	10.2	0.119	3740	311	<25.0	41.3	609	662	6.6	3.78	0.298	10.5	24.5	0.107	0.754	5.88	<1.36	43.0
4F-2	0.75	11.5	0.122	2970	326	<25.0	36.5	606	676	6.8	3.78	0.298	10.5	24.5	0.107	0.754	5.88	<1.36	43.0
5A-1	0.7	9.8	0.105	1470	422	<125	9.58	653	618	6.0	3.47	0.187	9.18	21.4	0.0603	0.048	6.79	<1.29	32.0
5A-2	0.54	11	0.101	2770	389	<25.0	4.73	678	541	7.0	3.47	0.187	9.18	21.4	0.0603	0.048	6.79	<1.29	32.0
6B	0.5	9	0.089	6120	288	<25.0	2.86	654	328	7.4	4.07	0.214	7.36	12.9	0.0626	0.509	3.10	<1.00	40.2
6C	0.43	8.2	0.095	3380	274	<25.0	4.05	612	325	7.3	4.02	0.24	8.55	12.4	0.0636	0.533	2.81	<1.00	42.7
6D	0.46	11.3	0.103	5980	375	<25.0	3.37	550	676	7.6	3.48	0.192	8.00	10.6	0.0511	0.481	2.52	<1.00	44.5
6E-1	0.47	11.4	0.071	3860	298	<125	8.55	722	457	7.5	3.10	<0.123	4.87	14.5	0.0292	0.366	4.69	<1.23	20.2
6E-2	0.47	11.00	0.102	3000	279	<125	5.94	707	435	7.3	3.10	<0.123	4.87	14.5	0.0292	0.366	4.69	<1.23	20.2
6F*																			
7A	0.40	7.20	0.095	1060	262	<25.0	<1.00	293	386	6.6	3.15	0.191	6.09	13.2	0.0710	0.378	5.72	<1.00	25.6
7B	0.38	6.90	0.141	1000	259	<25.0	1.64	301	387	6.3	3.29	0.196	5.44	13.4	0.0487	0.415	6.05	<1.00	24
7D	0.57	6.90	0.132	1190	295	<25.0	<1.00	335	431	6.9	3.34	0.216	6.11	28.5	0.0262	0.493	7.48	<1.00	60.7
8-1	0.41	6.60	0.124	2100	231	<25.0	4.6	236	333	7.4	3.39	<0.110	4.13	16.7	0.0326	0.424	8.80	<1.10	16.0
8-2	0.51	5.40	0.108	1780	211	<25.0	4.77	271	312	7.4	3.39	<0.110	4.13	16.7	0.0326	0.424	8.80	<1.10	16.0
9	0.61	6.10	0.089	919	330	<25.0	9.17	358	491	6.2	3.10	0.109	4.29	15.5	0.0337	0.547	12.9	<1.00	19.7
10	0.43	14.1	0.095	3630	377	<25.0	7.65	687	490	7.0	<5.00	<0.500	4.45	57.6	0.0345	<1.25	6.83	<5.00	21.3

\*6F is identified as a sludge application site, but the City of Harrison has not applied biosolids to this site  
\*\*1C, 2E, 2F are no longer used as sludge spreading fields due to changes to the fields

The Monitoring Frequency listed Part 1, Table II of Permit No 5158-W for these parameters is once every five years. These parameters were last reported on 2012 Annual Biosolids Report

**City of Harrison Arkansas Permit No. 5158-W  
40 CFR Part 503 2017 Annual Biosolids Report 2013**

**40 CFR 503.18 Reporting**

**503.17(a)(4)(i)(A)**

<b>503 Pollutant Concentrations</b>			
<b>Pollutant</b>	<b>Monthly Average Concentration Limit <sup>(1)</sup> (mg/kg)</b>	<b>Permit Ceiling Concentration Limits <sup>(2)</sup> (mg/kg)</b>	<b>Concentration in Sludge Land Applied (mg/kg)</b>
Arsenic	41	75	7.52
Cadmium	39	85	1.98
Copper	1,500	4,300	515.00
Lead	300	840	35.00
Mercury	17	57	2.49
Nickel	420	420	111.00
Selenium	100	100	9.10
Zinc	2,800	7,500	1410.00

(1) Table 3 of 40 CFR Part 503.13 - Pollutant Concentrations

(2) City of Harrison, Arkansas Permit No. 5158-W Section A.

**503.17(a)(4)(i)(B)**

I certify, under penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirements in 503.32(b) and the vector attraction reduction requirement in 503.33(b)(4) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

*Kathryn Catten*  
Signature

Wastewater Systems Manager  
Title

*4/12/2018*  
Date

**503.17(a)(4)(i)(C)**

Seven representative samples of the sewage sludge that is used or disposed shall be collected. (ii) The geometric mean of the density of fecal coliform in the samples collected in paragraph (b)(2)(i) of this section shall be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis).

**503.17(a)(4)(i)(D)**

The method of deterring that the vector attraction reduction is met: 503.33(b)(4) The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius.























































Harrison, Arkansas 2017 Wastewater Treatment  
Plant Lifetime Cumulative Loading Table

FIELD # 10	40 CFR Part 503 Pollutants of Concern									
	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Molbdenum	Nickel	Selenium	Zinc
Year	lb/ac	lb/ac	lb/ac	lb/ac	lb/ac	lb/ac	lb/ac	lb/ac	lb/ac	lb/ac
1993		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1994	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1995	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1996	0.0114	0.0128	0.0525	0.2638	0.0912	0.0022	0.0114	0.0516	0.1939	0.7562
1997	0.3239	0.0358	0.6373	1.9712	1.0306	0.0151	0.0814	0.5010	0.4862	6.6011
1998	0.0855	0.0088	0.1121	0.5163	0.2192	0.0038	0.0170	0.0757	0.1293	1.7009
1999	0.0032	0.0064	0.0594	0.2134	0.0538	0.0013	0.0159	0.0452	0.0032	0.6283
2000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2003	0.0231	0.0107	0.2590	1.1098	0.2037	0.0074	0.0520	0.2609	0.0514	2.9813
2004	0.0379	0.0072	0.2651	1.1521	0.1805	0.0169	0.0656	0.3664	0.0271	3.3568
2005	0.0152	0.0062	0.1355	1.0842	0.1190	0.0080	0.0398	0.2822	0.0224	2.6279
2006	0.0051	0.0059	0.0847	0.6863	0.0544	0.0080	0.0292	0.1489	0.0115	1.6401
2007	0.0009	0.0008	0.0163	0.1275	0.0112	0.0009	0.0040	0.0108	0.0031	0.5147
2008	0.0127	0.0060	0.1368	1.2639	0.0957	0.0073	0.0320	0.1968	0.0240	4.0950
2009	0.0087	0.0023	0.0892	0.6087	0.0473	0.0078	0.0144	0.0729	0.0142	1.7578
2010	0.0014	0.0005	0.0146	0.0971	0.0062	0.0006	0.0026	0.0094	0.0018	0.2084
2011	0.0207	0.0053	0.1530	1.3781	0.0928	0.0057	0.0302	0.3027	0.0236	4.0971
2012	0.0242	0.0067	0.2233	1.7061	0.1170	0.0098	0.0368	0.3842	0.0262	4.0218
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.01143	0.00284	0.0000	0.63368	0.04040	0.00365	0.01480	0.06420	0.01143	1.74330
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018										
2019										
2020										

Total	0.5740	0.1154	2.2388	12.1786	2.3227	0.0951	0.4324	2.7086	1.0180	34.9873
Average	0.0261	0.0050	0.0973	0.5295	0.1010	0.0041	0.0188	0.1178	0.0443	1.5212
Maximum	0.3239	0.0358	0.6373	1.9712	1.0306	0.0169	0.0814	0.5010	0.4862	6.6011
Minimum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

*\*Chromium not a listed permit parameter in Permit No 51-58-W issued December 1, 2012*























































Harrison, Arkansas  
Wastewater Treatment Plant  
Lifetime Cumulative Loading Table

FIELD # 10	40 CFR Part 503 Pollutants of Concern									
	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Zinc
Year	kg/hc	kg/hc	kg/hc	kg/hc	kg/hc	kg/hc	kg/hc	kg/hc	kg/hc	kg/hc
1993										
1994										
1995										
1996	0.0128	0.0144	0.0590	0.2964	0.1025	0.0025	0.0128	0.0580	0.2179	0.8497
1997	0.3639	0.0402	0.7161	2.2148	1.1580	0.0170	0.0915	0.5629	0.5463	7.4170
1998	0.0961	0.0099	0.1260	0.5801	0.2463	0.0043	0.0191	0.0850	0.1453	1.9111
1999	0.0036	0.0072	0.0667	0.2398	0.0605	0.0015	0.0179	0.0508	0.0036	0.7059
2000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
2003	0.0260	0.0120	0.2910	1.2470	0.2289	0.0083	0.0585	0.2931	0.0577	3.3498
2004	0.0426	0.0081	0.2979	1.2945	0.2028	0.0190	0.0737	0.4117	0.0305	3.7716
2005	0.0171	0.0070	0.1522	1.2182	0.1337	0.0090	0.0447	0.3170	0.0251	2.9526
2006	0.0057	0.0066	0.0951	0.7712	0.0611	0.0090	0.0329	0.1673	0.0130	1.8428
2007	0.0010	0.0009	0.0184	0.1433	0.0126	0.0011	0.0045	0.0122	0.0035	0.5783
2008	0.0143	0.0067	0.1537	1.4201	0.1075	0.0082	0.0360	0.2211	0.0270	4.6011
2009	0.0097	0.0026	0.1002	0.6840	0.0532	0.0088	0.0162	0.0819	0.0160	1.9751
2010	0.0016	0.0005	0.0165	0.1091	0.0070	0.0007	0.0029	0.0106	0.0020	0.2342
2011	0.0233	0.0060	0.1719	1.5485	0.1043	0.0064	0.0339	0.3401	0.0266	4.6034
2012	0.0272	0.0075	0.2509	1.9170	0.1315	0.0110	0.0413	0.4317	0.0294	4.5189
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018										
2019										
2020										
<b>Total</b>	<b>0.1680</b>	<b>0.1235</b>	<b>1.1061</b>	<b>7.2075</b>	<b>2.1430</b>	<b>0.0721</b>	<b>0.1483</b>	<b>1.3423</b>	<b>2.1892</b>	<b>21.5772</b>
<b>Average</b>	<b>0.0093</b>	<b>0.0065</b>	<b>0.0582</b>	<b>0.3793</b>	<b>0.1128</b>	<b>0.0038</b>	<b>0.0082</b>	<b>0.0706</b>	<b>0.1216</b>	<b>1.1356</b>
<b>Maximum</b>	<b>0.0469</b>	<b>0.0790</b>	<b>0.6010</b>	<b>3.6393</b>	<b>1.5187</b>	<b>0.0440</b>	<b>0.0249</b>	<b>0.8021</b>	<b>1.9399</b>	<b>10.5107</b>
<b>Minimum</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

2012	0.1280	0.0344	1.1702	8.8697	0.6035	0.0494	0.1971	1.9254	0.1439	21.0261
2013	0.4724	0.0975	0.0000	25.3786	1.8127	0.1941	0.5346	8.6115	0.8473	81.3390
2014	0.1676	0.0272	0.0000	8.1294	0.6663	0.0719	0.1978	1.4373	0.1676	23.8854
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>4.200</b>	<b>3.087</b>	<b>27.65</b>	<b>180.2</b>	<b>53.58</b>	<b>1.803</b>	<b>3.7076</b>	<b>33.56</b>	<b>54.73</b>	<b>539.4</b>

City of Harrison, AR - Permit # 5158-W  
2017 Annual BioSolids Analysis kg/ha

Field No.	Arsenic	Cadmium	Chromium*	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Zinc
	kg/ha	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1A	0.00170	0.00045		0.11664	0.00793	0.00056	0.00231	0.02514	0.00206	0.31936
1B	0.00088	0.00023		0.06034	0.00410	0.00029	0.00120	0.01300	0.00107	0.16519
1C										
2E										
2F										
3A	0.01630	0.00429		1.11638	0.07587	0.00540	0.02211	0.24062	0.01973	3.05650
3B	0.00978	0.00258		0.67008	0.04554	0.00324	0.01327	0.14442	0.01184	1.83458
4A	0.00235	0.00062		0.16066	0.01092	0.00078	0.00318	0.03463	0.00284	0.43986
4B	0.00690	0.00182		0.47241	0.03211	0.00228	0.00936	0.10182	0.00835	1.29339
4C	0.00720	0.00190		0.49313	0.03351	0.00238	0.00977	0.10629	0.00871	1.35012
4D										
4E	0.00173	0.00046		0.11835	0.00804	0.00057	0.00234	0.02551	0.00209	0.32403
4F	0.00415	0.00109		0.28442	0.01933	0.00138	0.00563	0.06130	0.00503	0.77869
5	0.00742	0.00195		0.50815	0.03453	0.00246	0.01006	0.10952	0.00898	1.39125
6B	0.00853	0.00225		0.58397	0.03969	0.00282	0.01157	0.12587	0.01032	1.59883
6C	0.00828	0.00218		0.56726	0.03855	0.00274	0.01124	0.12226	0.01002	1.55308
6D	0.00262	0.00069		0.17948	0.01220	0.00087	0.00355	0.03869	0.00317	0.49140
6E	0.00102	0.00027		0.06962	0.00473	0.00034	0.00138	0.01501	0.00123	0.19061
6F										
7A	0.00399	0.00105		0.27316	0.01856	0.00132	0.00541	0.05887	0.00483	0.74786
7B	0.01121	0.00295		0.76785	0.05218	0.00371	0.01521	0.16550	0.01357	2.10227
7D										
8	0.00049	0.00013		0.03327	0.00226	0.00016	0.00066	0.00717	0.00059	0.09110
9										
10										
<b>Total</b>	<b>0.09455</b>	<b>0.02489</b>	<b>0.00000</b>	<b>6.47516</b>	<b>0.44006</b>	<b>0.03131</b>	<b>0.12825</b>	<b>1.39562</b>	<b>0.11442</b>	<b>17.72812</b>

\*Chromium not a listed permit parameter in Permit No 51-58-W issued December 1, 2012

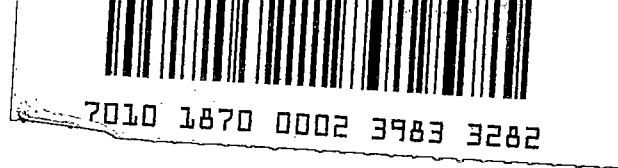


## Annual Whole Sludge Application Rate 2017

	APLR from Table 4 of 503.13	Conc mg/kg	0.001	AWSAR = APLR / (Conc. Mg/kg x .001)
Arsenic	2	7.52	0.001	266
Cadmium	1.9	1.98	0.001	960
Copper	75	515	0.001	146
Lead	15	35	0.001	429
Mercury	0.85	2.49	0.001	341
Nickel	21	111.00	0.001	189
Selenium	5	9.10	0.001	549
Zinc	140	1410	0.001	99

Report lowest number on Annual Sludge Report

Harrison, AR 72602



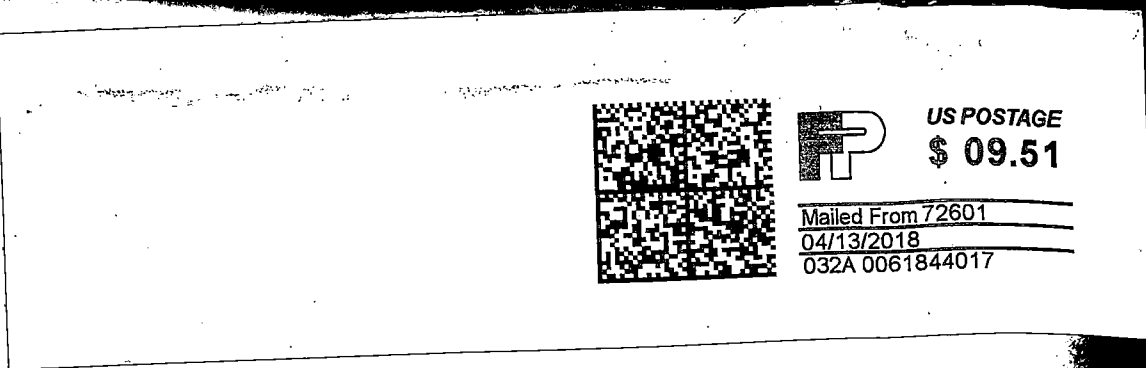
US POSTAGE  
\$ 09.51

Mailed From 72601  
04/13/2018  
032A 0061844017

Leslie Allen-Daniels  
5301 Northshore Dr,  
North Little Rock, AR 72118

RETURN RECEIPT  
REQUESTED \*

City of Harrison / W.W.T.P.  
P.O. Box 1715  
Harrison, AR 72602



RETURN RECEIPT  
REQUESTED

Katherine Yarberry  
5301 Northshore Dr.  
North Little Rock, AR 72118

RETURN RECEIPT  
REQUESTED