



Dyersburg Wastewater Treatment Plant  
Annual Biosolids Report  
Land Applied Bio-solids for 2017  
January 5, 2018

## ANNUAL REPORT

### Biosolids Generated- General Information

- a. Total Bio solids Applied in 2014: 242.10 Dry Metric Tons
- b. Concentration of Metals. See attached lab reports.
- c. PCB : Report Date 3/12/2014 See attached Lab Report
- d. TCLP: Report Date 3/12/2014 See attached Lab Report
- e. Pathogen Reduction Process Description and Results: Aerobic Digestion  
Pathogen reduction for the City of Dyersburg is achieved utilizing Alternative 1 for Class B Bio-solids located in Appendix C: Pathogen reduction alternatives for Class B Bio-solids. Attached to this report you will find the appropriate certification statement (Statement # 6) along with the most recent samples taken for Fecal Coliform analysis titled Pathogen Compliance Log.
- f. Vector Attraction Reduction Description and Results: Aerobic Digestion  
The City of Dyersburg achieves Vector Attraction Reduction under the General State Operating Permit for the Land Application of Non-Exceptional Quality Bio-solids section 3.1.3 (a) & 3.1.3. (i). Section 3.1.3 (i) allows Bio solids to be injected below the surface of the land, and no significant amount of the bio solids shall be present on the land surface within one hour after the bio solids are injected. Section 3.1.3 (a) allows Bio-Solids to be land applied when the mass of volatile in the Bio-Solids have been reduced by a minimum of 38 %. If the bio-solids meet the Class A pathogen requirements, the bio solids shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process. Attached to this report you will find Certification statement # 6.
- g. Generator Certification Statement  
The City of Dyersburg has provided with this report the Certification Statements required thru The General State Operating Permit for the Land Application of Non-Exceptional Quality Bio-solids. Attached to this report Certification Statement # 6 for Pathogen and vector Attraction requirements, certification Statement # 5 for Management Practices in Section 3.2.

### Application Sites

- a. Site Name/ or Number : Dyersburg STP / TNB023477
- b. Site Owner : City of Dyersburg
- c. Site Operator : City of Dyersburg
- d. Applier: City of Dyersburg
- e. Latitude and Longitude of Site: Lat. 36' 01' 30" Lon. 89' 24' 45"
- f. Street Address, other location description: Located adjacent to 2000 Honeydew Lane  
Dyersburg, TN 38024
- g. County: Dyer

- h. Size (acres).
  - 1. Approved Acres: 115
  - 2. Acres excluding setbacks: 102 Approximately
  - 3. Acres Applied: 102
- i. Crop Information.
  - 1. Crop/s Grown: Soybeans / Hybrid Bermuda Hay
  - 2. Yield: 61.9 Bushels per acre / 7.5 Tons/acre
- j. Application Method: Class B Alternative 1 (i)(ii)
- k. Agronomic Rate (tons/acre) and if applicable, the cumulative loadings for each contaminant.
  - 1. Agronomic Loading Rate: 2.37 T/Acre
  - 2. Maximum Plant Available Nitrogen (PAN) loading lbs. N/Acre  
Derived from TDEC Agronomic Loading Spreadsheet Revision 2/3/2011  
Soybeans 190 lbs. /acre Hybrid Bermuda Hay 400 lbs./acre
  - 3. Loading Rate to achieve PAN Dry T/Acre  
3.7 T/Acre South & Middle Sections 12.3 T/Acre North Section
  - 4. Actual application tonnage/volume wet: 2,380,000
  - 5. Actual application tonnage , dry 242.1 Dry T/Acre
  - 6. Total wet tons or volume per field: 2,380,000
  - 7. Total dry tons per field 242.1 Tons
- l. Nitrogen Concentrations. Report average and maximum test concentrations
  - 1. Ammonia: Maximum: 14,700 mg/kg Average: 6,765 mg/kg
  - 2. Average TKN: Maximum: 58,300 mg/kg Average: 44,525 mg/kg
  - 3. Average Organic Nitrogen: Maximum : 47,000 mg/kg Average: 37,725 mg/kg
  - 4. Average Nitrate Maximum: 221 mg/kg Average: 88.1 mg/kg
  - 5. Total Solids Percent: Average: 2.91 %
- m. Ammonia, TKN, NO2, NO3 as percent of Total Solids
  - 1. See Agronomic Loading Rate Worksheet attached.
  - 2. Item 1,a is pounds of TKN, TKN lbs./ 2000 = 4.45% TKN
  - 3. Item 1,b is pounds of NH3, NH3 lbs./ 2000 = .67% NH3
  - 4. Item 1,c is pounds of NO2+3,NO2+3 lbs./ 2000 = .009% NO2+3
- n. Tonnage Applied
  - 1. Biosolids Applied to Site
    - i. Total Tonnage or Volume 2,380,000 gallons
    - ii. Dry tons 242.1 metric tons
  - 2. Biosolids Applied to Each Site
    - i. First Application Date 1/16/2017
    - ii. Last Application Date 12/05/2017
- o. Metals: See attached Lab Report
- p. Management Practices. (Describe how each item below is met)
  - 1. Set Backs: Obvious field line with tree line as buffer >100' from river.
  - 2. Agronomic Loading: Calculated quarterly with applications tracked as they occur.
  - 3. Weather Restrictions: Per 3.2.3 in General Permit TNB023477
  - 4. Soil Restrictions: Per 3.2.4 in General Permit TNB023477
  - 5. Threatened and Endangered Species: Per 3.2.5 in General Permit TNB023477. No know Threatened or Endangered Species know to be within disposal area.
  - 6. Metals Loading: Always met Table 3 with testing results attached.
  - 7. Notification of Owners: City of Dyersburg owners of permitted disposal area.
- q. Site Restrictions (describe how site restrictions are met): Growing season is longer than site restriction in 3.1.2.3.
- r. Certification Statement/s: All appropriate statements included



**City of Dyersburg**  
**Wastewater Treatment**  
P.O. Box 1358  
2000 Honeydew Ln.  
Dyersburg, TN 38025-1358  
Phone: 731-286-7626 Fax: 731-286-7694  
www.dyersburgtn.gov - mgoff@dyersburgtn.gov

Certification Statement 5

“I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in Section 3.2, the site restrictions in Subsection 3.1.2.3, and the vector attraction reduction requirement in 3.1.3 (a), 3.1.3 (d) &/or 3.1.3 (i) was prepared for each site on which bulk bio solids are applied 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.”

Michael Goff

A handwritten signature in blue ink, appearing to read "Michael Goff", written over a horizontal line.

\_\_\_\_\_  
Name (Printed or typed)

\_\_\_\_\_  
Signature

Superintendent, STP

January, 5 2017

\_\_\_\_\_  
Title (Printed or typed)

\_\_\_\_\_  
Date





**City of Dyersburg**  
**Wastewater Treatment**  
P.O. Box 1358  
2000 Honeydew Ln.  
Dyersburg, TN 38025-1358  
Phone: 731-286-7626 Fax: 731-286-7694  
www.dyersburgtn.gov - mgoff@dyersburgtn.gov

Certification Statement 6

“I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in Appendix C Alternative 1(ii) and the vector attraction reduction requirement in 3.1.3 (a), 3.1.3 (d) &/or 3.1.3 (i) 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.”

Michael Goff

A handwritten signature in blue ink, appearing to read "michael goff", written over a horizontal line.

\_\_\_\_\_  
Name (Printed or typed)

\_\_\_\_\_  
Signature

Superintendent, STP

January, 5 2017

\_\_\_\_\_  
Title (Printed or typed)

\_\_\_\_\_  
Date





03319  
City of Dyersburg  
Mr. Mike Goff  
P. O. Box 1358  
Dyersburg , TN 38025

Project WWTP & Quarterly Sludge  
Information :

Report Date : 1/24/2017

Report Number : **17-012-0238**

**REPORT OF ANALYSIS**

Received : 1/12/2017

Lab No : **89485**  
Sample ID : **Digester #1**

Matrix: **Solids**  
Sampled: **1/12/2017 8:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	<b>98.0</b>	%	0.100	1	01/17/17 10:22	CJR	2540G-2011
Ammonia Nitrogen	<b>6100</b>	mg/Kg - dry	1250	1	01/24/17 08:00	ZBD	4500NH3C-2011
Chromium, Hexavalent	<25.0	mg/Kg - dry	25.0	1	01/19/17 09:30	TKM	3060A/7196A
Chromium, Tri-valent	<b>36000</b>	µg/Kg - dry	12500	1	01/16/17 15:33		CALCULATION ~
Nitrate (NO3-N)	<50.0	mg/Kg - dry	50.0	1	01/17/17 15:05	BKN	9056
Nitrite (NO2-N)	<50.0	mg/Kg - dry	50.0	1	01/17/17 15:05	BKN	9056
Nitrate+Nitrite-N	<50.0	mg/Kg - dry	50.0	1	01/17/17 15:05		9056
Organic N	<b>34600</b>	mg/Kg - dry	2500	1	01/19/17 09:59		CALCULATION ~
pH	<b>7.1</b>	s.u.		1	01/16/17 10:30	LAP	9045D
Total Solids	<b>2.02</b>	%	0.100	1	01/17/17 10:22	CJR	2540G-2011
Total Volatile Solids	<b>43.5</b>	%	0.100	1	01/17/17 10:22	CJR	2540G-2011
Total Kjeldahl Nitrogen	<b>40700</b>	mg/Kg - dry	2500	1	01/19/17 09:59	CLP	4500NORGD-2011
Total Nitrogen	<b>40700</b>	mg/Kg - dry	50.0	1	01/17/17 15:05		CALCULATION ~
Total Phosphorus	<b>14400</b>	mg/Kg - dry	1250	1	01/19/17 13:03	CLP	365.4
Total Arsenic	<12.5	mg/Kg - dry	12.5	5	01/16/17 15:33	BKN	6020A
Total Cadmium	<12.5	mg/Kg - dry	12.5	5	01/16/17 15:33	BKN	6020A
Total Chromium	<b>36.0</b>	mg/Kg - dry	12.5	5	01/16/17 15:33	BKN	6020A
Total Copper	<b>139</b>	mg/Kg - dry	12.5	5	01/16/17 15:33	BKN	6020A
Total Lead	<b>18.0</b>	mg/Kg - dry	12.5	5	01/16/17 15:33	BKN	6020A
Mercury (Total)	<b>3.81</b>	mg/Kg - dry	0.665	1	01/16/17 10:51	KKM	7471A
Total Molybdenum	<12.5	mg/Kg - dry	12.5	5	01/16/17 15:33	BKN	6020A
Total Nickel	<b>20.8</b>	mg/Kg - dry	12.5	5	01/16/17 15:33	BKN	6020A
Total Potassium	<b>32500</b>	mg/Kg - dry	1250	5	01/18/17 12:45	BKN	6020A
Total Selenium	<12.5	mg/Kg - dry	12.5	5	01/18/17 12:45	BKN	6020A
Total Zinc	<b>625</b>	mg/Kg - dry	62.5	5	01/16/17 15:33	BKN	6020A

<b>Qualifiers/ Definitions</b>	DF	Dilution Factor	MQL	Method Quantitation Limit
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03319  
City of Dyersburg  
Mr. Mike Goff  
P. O. Box 1358  
Dyersburg , TN 38025

Project WWTP & Quarterly Sludge  
Information :

Report Date : 4/18/2017

Report Number : **17-096-0309**

**REPORT OF ANALYSIS**

Received : 4/6/2017

Lab No : **99214**  
Sample ID : **Digester #1**

Matrix: **Solids**  
Sampled: **4/6/2017 8:15**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	<b>94.7</b>	%	0.100	1	04/10/17 15:15	CJR	2540G-2011
Ammonia Nitrogen	<b>4190</b>	mg/Kg - dry	472	1	04/17/17 10:30	ZBD	4500NH3C-2011
Chromium, Hexavalent	<9.43	mg/Kg - dry	9.43	1	04/13/17 09:00	TKM	3060A/7196A
Chromium, Tri-valent	<b>12000</b>	µg/Kg - dry	4720	1	04/13/17 09:00		CALCULATION ~
Nitrate (NO3-N)	<18.9	mg/Kg - dry	18.9	1	04/13/17 17:48	BKN	9056
Nitrite (NO2-N)	<18.9	mg/Kg - dry	18.9	1	04/13/17 17:48	BKN	9056
Nitrate+Nitrite-N	<18.9	mg/Kg - dry	18.9	1	04/13/17 17:48		9056
Organic N	<b>25700</b>	mg/Kg - dry	943	1	04/13/17 16:08		CALCULATION ~
pH	<b>7.4</b>	s.u.		1	04/17/17 08:30	SAJ	9045D
Total Solids	<b>5.25</b>	%	0.100	1	04/10/17 15:15	CJR	2540G-2011
Total Volatile Solids	<b>46.8</b>	%	0.100	1	04/10/17 15:15	CJR	2540G-2011
Total Kjeldahl Nitrogen	<b>29800</b>	mg/Kg - dry	943	1	04/13/17 16:08	CLP	4500NORGD-201:
Total Nitrogen	<b>29800</b>	mg/Kg - dry	943	1	04/13/17 16:08	ELK	CALCULATION ~
Total Phosphorus	<b>10400</b>	mg/Kg - dry	2090	5	04/14/17 09:10	CLP	365.4
Total Arsenic	<4.72	mg/Kg - dry	4.72	5	04/13/17 18:24	BKN	6020A
Total Cadmium	<4.72	mg/Kg - dry	4.72	5	04/13/17 18:24	BKN	6020A
Total Chromium	<b>12.0</b>	mg/Kg - dry	4.72	5	04/13/17 18:24	BKN	6020A
Total Copper	<b>58.9</b>	mg/Kg - dry	4.72	5	04/13/17 18:24	BKN	6020A
Total Lead	<b>9.43</b>	mg/Kg - dry	4.72	5	04/13/17 18:24	BKN	6020A
Mercury (Total)	<b>3.04</b>	mg/Kg - dry	0.251	1	04/07/17 13:07	ABC	7471A
Total Molybdenum	<4.72	mg/Kg - dry	4.72	5	04/13/17 18:24	BKN	6020A
Total Nickel	<b>8.25</b>	mg/Kg - dry	4.72	5	04/14/17 12:57	BKN	6020A
Total Potassium	<b>11300</b>	mg/Kg - dry	472	5	04/13/17 18:24	BKN	6020A
Total Selenium	<4.72	mg/Kg - dry	4.72	5	04/13/17 18:24	BKN	6020A
Total Zinc	<b>253</b>	mg/Kg - dry	23.6	5	04/13/17 18:24	BKN	6020A

<b>Qualifiers/ Definitions</b>	DF	Dilution Factor	MQL	Method Quantitation Limit
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2790 Whitten Road, Memphis, TN 38133  
 Main 901.213.2400 ° Fax 901.213.2440  
 www.waypointanalytical.com

03319  
 City of Dyersburg  
 Mr. Mike Goff  
 P. O. Box 1358  
 Dyersburg , TN 38025

Project WWTP & Quarterly Sludge  
 Information :

Report Date : 8/14/2017

Report Number : 17-215-0238

**REPORT OF ANALYSIS**

Received : 8/3/2017

Lab No : 91667

Matrix: Solids

Sample ID : Sludge

Sampled: 8/3/2017 8:10

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	97.3	%	0.100	1	08/09/17 11:58	CJR	2540G-2011
Ammonia Nitrogen	2070	mg/Kg - dry	926	1	08/10/17 09:00	ZBD	4500NH3C-2011
Chromium, Hexavalent	<18.5	mg/Kg - dry	18.5	1	08/07/17 08:45	TKM	3060A/7196A
Chromium, Tri-valent	37.4	mg/Kg - dry	1850	1	08/07/17 08:45		CALCULATION ~
Nitrate (NO3-N)	221	mg/Kg - dry	37.0	1	08/09/17 00:23	BKN	9056
Nitrite (NO2-N)	<37.0	mg/Kg - dry	37.0	1	08/09/17 00:23	BKN	9056
Nitrate+Nitrite-N	221	mg/Kg - dry	37.0	1	08/09/17 00:23		9056
Organic N	47000	mg/Kg - dry	1850	1	08/09/17 14:49		CALCULATION ~
pH	6.8	s.u.		1	08/14/17 09:30	LAP	9045D
Total Solids	2.72	%	0.100	1	08/09/17 11:58	CJR	2540G-2011
Total Volatile Solids	31.7	%	0.100	1	08/09/17 11:58	CJR	2540G-2011
Total Kjeldahl Nitrogen	49300	mg/Kg - dry	1850	1	08/09/17 14:49	CLP	4500NORGD-201:
Total Nitrogen	49600	mg/Kg - dry	37.0	1	08/09/17 00:23		CALCULATION ~
Total Phosphorus	25300	mg/Kg - dry	4480	5	08/10/17 15:07	CLP	365.4
Total Arsenic	12.6	mg/Kg - dry	1.85	1	08/10/17 18:05	BKN	6020A
Total Cadmium	<1.85	mg/Kg - dry	1.85	1	08/10/17 18:05	BKN	6020A
Total Chromium	37.4	mg/Kg - dry	1.85	1	08/10/17 18:05	BKN	6020A
Total Copper	170	mg/Kg - dry	1.85	1	08/10/17 18:05	BKN	6020A
Total Lead	22.4	mg/Kg - dry	1.85	1	08/10/17 18:05	BKN	6020A
Mercury (Total)	1.29	mg/Kg - dry	0.493	1	08/04/17 11:32	KKM	7471A
Total Molybdenum	5.44	mg/Kg - dry	1.85	1	08/11/17 11:11	BKN	6020A
Total Nickel	27.5	mg/Kg - dry	1.85	1	08/10/17 18:05	BKN	6020A
Total Potassium	24100	mg/Kg - dry	185	1	08/10/17 18:05	BKN	6020A
Total Selenium	3.14	mg/Kg - dry	1.85	1	08/10/17 18:05	BKN	6020A
Total Zinc	689	mg/Kg - dry	9.26	1	08/10/17 18:05	BKN	6020A

**Qualifiers/  
Definitions**

DF Dilution Factor

MQL Method Quantitation Limit

Oct. - Dec. 2017



2790 Whitten Road, Memphis, TN 38133  
Main 901.213.2400 ° Fax 901.213.2440  
www.waypointanalytical.com

03319  
City of Dyersburg  
Mr. Mike Goff  
P. O. Box 1358  
Dyersburg , TN 38025

Project Quarterly Sludge  
Information :

Report Date : 11/30/2017

Report Number : 17-319-0306

**REPORT OF ANALYSIS**

Received : 11/15/2017

Lab No : 92541  
Sample ID : Digester #1

Matrix: Solids  
Sampled: 11/15/2017 8:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	98.4	%	0.100	1	11/20/17 16:05	CJR	2540G-2011
Ammonia Nitrogen	14700	mg/Kg - dry	1560	1	11/28/17 15:30	ZBD	4500NH3C-2011
Chromium, Hexavalent	<31.3	mg/Kg - dry	31.3	1	11/16/17 10:10	CJH	3060A/7196A
Chromium, Tri-valent	34.1	mg/Kg - dry	15.6	1	11/16/17 10:10		CALCULATION ~
Nitrate (NO3-N)	<62.5	mg/Kg - dry	62.5	1	11/17/17 20:29	BKN	9056
Nitrite (NO2-N)	<62.5	mg/Kg - dry	62.5	1	11/17/17 20:29	BKN	9056
Nitrate+Nitrite-N	<62.5	mg/Kg - dry	62.5	1	11/17/17 20:29		9056
Organic N	43600	mg/Kg - dry	3130	1	11/28/17 15:30		CALCULATION ~
pH	7.5	s.u.		1	11/27/17 08:47	SAJ	9045D
Total Solids	1.64	%	0.100	1	11/20/17 16:05	CJR	2540G-2011
Total Volatile Solids	45.6	%	0.100	1	11/20/17 16:05	CJR	2540G-2011
Total Kjeldahl Nitrogen	58300	mg/Kg - dry	3130	1	11/28/17 17:31	CLP	4500NORGD-201:
Total Nitrogen	58300	mg/Kg - dry	62.5	1	11/17/17 20:29		CALCULATION ~
Total Phosphorus	18200	mg/Kg - dry	1560	1	11/28/17 16:52	CLP	365.4
Total Arsenic	<15.6	mg/Kg - dry	15.6	5	11/28/17 19:56	CCR	6020A
Total Cadmium	<15.6	mg/Kg - dry	15.6	5	11/28/17 19:56	CCR	6020A
Total Chromium	34.1	mg/Kg - dry	15.6	5	11/28/17 19:56	CCR	6020A
Total Copper	228	mg/Kg - dry	15.6	5	11/28/17 19:56	CCR	6020A
Total Lead	21.3	mg/Kg - dry	15.6	5	11/28/17 19:56	CCR	6020A
Mercury (Total)	<0.831	mg/Kg - dry	0.831	1	11/17/17 13:26	TJS	7471A
Total Molybdenum	<15.6	mg/Kg - dry	15.6	5	11/28/17 19:56	CCR	6020A
Total Nickel	22.2	mg/Kg - dry	15.6	5	11/28/17 19:56	CCR	6020A
Total Potassium	35700	mg/Kg - dry	1560	5	11/28/17 19:56	CCR	6020A
Total Selenium	<15.6	mg/Kg - dry	15.6	5	11/28/17 19:56	CCR	6020A
Total Zinc	956	mg/Kg - dry	78.1	5	11/28/17 19:56	CCR	6020A

<b>Qualifiers/ Definitions</b>	DF	Dilution Factor	MQL	Method Quantitation Limit
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440  
 "A Laboratory Management Partner"

03319  
 City of Dyersburg  
 Mr. Mike Goff  
 P. O. Box 1358  
 Dyersburg, TN 38025

Project Bio-Solids Testing  
 Information :

Report Date : 03/21/2014  
 Received : 3/12/2014

Report Number : **14-071-0245**

## REPORT OF ANALYSIS

Lab No : **98492**

Matrix: **Solid**

Sample ID : **Solids**

Sampled: **3/12/2014 7:00**

Test	Results	Units	MLQ	DF	Date / Time Analyzed	By	Analytical Method
TCLP Herbicide Extraction	<b>Combined</b>			1	03/18/14 15:33	SAJ	SW-1311
TCLP Metals Extraction	<b>Combined</b>			1	03/18/14 15:33	SAJ	SW-1311
TCLP Pesticide Extraction	<b>Combined</b>			1	03/18/14 15:33	SAJ	SW-1311
TCLP SVOC Extraction	<b>Combined</b>			1	03/18/14 15:33	SAJ	SW-1311
TCLP VOC ZHE Extraction	<b>Combined</b>			1	03/17/14 15:01	SAJ	SW-1311 (ZHE)

**Analytical Method:** 6010B

**Prep Method:** 3005A

**Prep Batch(es):** L193119

**Date/Time Prepped:** 3/19/2014 10:00:00

Test	Results	Units	MLQ	DF	Date / Time Analyzed	By	Analytical Batch
TCLP Arsenic	<0.250	mg/L	0.250	1	03/19/14 17:26	BKN	L193256
TCLP Barium	<b>0.494</b>	mg/L	0.250	1	03/19/14 17:26	BKN	L193256
TCLP Cadmium	<0.050	mg/L	0.050	1	03/19/14 17:26	BKN	L193256
TCLP Chromium	<0.100	mg/L	0.100	1	03/19/14 17:26	BKN	L193256
TCLP Lead	<0.100	mg/L	0.100	1	03/19/14 17:26	BKN	L193256
TCLP Selenium	<0.500	mg/L	0.500	1	03/19/14 17:26	BKN	L193256
TCLP Silver	<0.050	mg/L	0.050	1	03/19/14 17:26	BKN	L193256

**Qualifiers/  
Definitions**

\* Outside QC limit  
 I Recovery out of range

DF Dilution Factor  
 MLQ Method Quantitation Limit





03319  
 City of Dyersburg  
 Mr. Mike Goff  
 P. O. Box 1358  
 Dyersburg , TN 38025

Project Bio-Solids Testing  
 Information :

Report Date : 03/21/2014  
 Received : 3/12/2014

Report Number : **14-071-0245**

**REPORT OF ANALYSIS**

Lab No : **98492**  
 Sample ID : **Solids**

Matrix: **Solid**  
 Sampled: **3/12/2014 7:00**

<b>Analytical Method:</b>	7470A	<b>Prep Batch(es):</b>		L193139	<b>Date/Time Prepped:</b>		3/19/2014 11:40:00	
<b>Prep Method:</b>	7470A	<b>Prep Batch(es):</b>		L193139	<b>Date/Time Prepped:</b>		3/19/2014 11:40:00	
<b>Test</b>	<b>Results</b>	<b>Units</b>	<b>MQL</b>	<b>DF</b>	<b>Date / Time Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>	
TCLP Mercury	<b>0.0018</b>	mg/L	0.0010	1	03/19/14 13:36	JRS	L193170	

<b>Analytical Method:</b>	8081A	<b>Prep Batch(es):</b>		L193179	<b>Date/Time Prepped:</b>		3/18/2014 15:15:00	
<b>Prep Method:</b>	3510C	<b>Prep Batch(es):</b>		L193179	<b>Date/Time Prepped:</b>		3/18/2014 15:15:00	
<b>Test</b>	<b>Results</b>	<b>Units</b>	<b>MQL</b>	<b>DF</b>	<b>Date / Time Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>	
TCLP Endrin	<0.001600	mg/L	0.001600	10	03/19/14 18:53	VIC	L193319	
TCLP gamma-BHC	<0.001600	mg/L	0.001600	10	03/19/14 18:53	VIC	L193319	
TCLP Methoxychlor	<0.001600	mg/L	0.001600	10	03/19/14 18:53	VIC	L193319	
TCLP Toxaphene	<0.01200	mg/L	0.01200	10	03/19/14 18:53	VIC	L193319	
TCLP Chlordane	<0.008000	mg/L	0.008000	10	03/19/14 18:53	VIC	L193319	
TCLP Heptachlor Epoxide	<0.001600	mg/L	0.001600	10	03/19/14 18:53	VIC	L193319	
TCLP Heptachlor	<0.001600	mg/L	0.001600	10	03/19/14 18:53	VIC	L193319	
Surrogate: Decachlorobiphenyl	76.13		Limits: 36-116%	10	03/19/14 18:53	VIC	L193319	
Surrogate: Tetrachloro-m-xylene	63.21		Limits: 25-123%	10	03/19/14 18:53	VIC	L193319	

<b>Analytical Method:</b>	8151A	<b>Prep Batch(es):</b>		L193121	<b>Date/Time Prepped:</b>		3/19/2014 10:00:00	
<b>Prep Method:</b>	8151A	<b>Prep Batch(es):</b>		L193121	<b>Date/Time Prepped:</b>		3/19/2014 10:00:00	
<b>Test</b>	<b>Results</b>	<b>Units</b>	<b>MQL</b>	<b>DF</b>	<b>Date / Time Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>	
TCLP 2,4-D	<0.0020	mg/L	0.0020	1	03/19/14 19:09	VIC	L193316	

<b>Qualifiers/ Definitions</b>	*	Outside QC limit	DF	Dilution Factor
	I	Recovery out of range	MQL	Method Quantitation Limit



# ENVIRONMENTAL TESTING & CONSULTING, INC.

2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440  
 "A Laboratory Management Partner"

03319  
 City of Dyersburg  
 Mr. Mike Goff  
 P. O. Box 1358  
 Dyersburg, TN 38025

Project Bio-Solids Testing  
 Information :

Report Date : 03/21/2014  
 Received : 3/12/2014

Report Number : **14-071-0245**

## REPORT OF ANALYSIS

Lab No : **98492**  
 Sample ID : **Solids**

Matrix: **Solid**  
 Sampled: **3/12/2014 7:00**

Analytical Method:		8151A	Prep Batch(es):		L193121	Date/Time Prepped:		3/19/2014 10:00:00
Prep Method:		8151A	Prep Batch(es):		L193121	Date/Time Prepped:		3/19/2014 10:00:00
Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch	
TCLP 2,4,5-TP (Silvex)	<0.0020	mg/L	0.0020	1	03/19/14 19:09	VIC	L193316	
Surrogate: DCAA	60.20		Limits: 20-120%	1	03/19/14 19:09	VIC	L193316	

Analytical Method:		8260B	Prep Batch(es):		L193132	Date/Time Prepped:		3/18/2014 09:16:00
Prep Method:		5030B	Prep Batch(es):		L193132	Date/Time Prepped:		3/18/2014 09:16:00
Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch	
TCLP Benzene	<0.0100	mg/L	0.0100	1	03/18/14 17:22	SEB	L193136	
TCLP Carbon Tetrachloride	<0.0100	mg/L	0.0100	1	03/18/14 17:22	SEB	L193136	
TCLP Chlorobenzene	<0.0100	mg/L	0.0100	1	03/18/14 17:22	SEB	L193136	
TCLP Chloroform	<0.0100	mg/L	0.0100	1	03/18/14 17:22	SEB	L193136	
TCLP 1,4-Dichlorobenzene	<0.0100	mg/L	0.0100	1	03/18/14 17:22	SEB	L193136	
TCLP 1,2-Dichloroethane	<0.0100	mg/L	0.0100	1	03/18/14 17:22	SEB	L193136	
TCLP 1,1-Dichloroethane	<0.0100	mg/L	0.0100	1	03/18/14 17:22	SEB	L193136	
TCLP Methyl Ethyl Ketone (MEK)	<0.200	mg/L	0.200	1	03/18/14 17:22	SEB	L193136	
TCLP Tetrachloroethene	<0.0100	mg/L	0.0100	1	03/18/14 17:22	SEB	L193136	
TCLP Trichloroethene	<0.0100	mg/L	0.0100	1	03/18/14 17:22	SEB	L193136	
TCLP Vinyl Chloride	<0.0100	mg/L	0.0100	1	03/18/14 17:22	SEB	L193136	
Surrogate: 4-Bromofluorobenzene	128		Limits: 71-137%	1	03/18/14 17:22	SEB	L193136	
Surrogate: Dibromofluoromethane	119		Limits: 70-128%	1	03/18/14 17:22	SEB	L193136	
Surrogate: 1,2-Dichloroethane - d4	<b>180 *</b>		Limits: 63-136%	1	03/18/14 17:22	SEB	L193136	
Surrogate: Toluene-d8	124		Limits: 70-130%	1	03/18/14 17:22	SEB	L193136	

Qualifiers/Definitions	*	Outside QC limit	DF	Dilution Factor
	I	Recovery out of range	MQL	Method Quantitation Limit



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03319  
 City of Dyersburg  
 Mr. Mike Goff  
 P. O. Box 1358  
 Dyersburg, TN 38025

Project Bio-Solids Testing  
 Information :

Report Date : 03/21/2014  
 Received : 3/12/2014

Report Number : 14-071-0245

## REPORT OF ANALYSIS

Lab No : 98492  
 Sample ID : Solids

Matrix: Solid  
 Sampled: 3/12/2014 7:00

Analytical Method: 8270C  
 Prep Method: 3510C

Prep Batch(es): L193135 Date/Time Prepped: 3/19/2014 11:15:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
TCLP 2-Methylphenol	<0.020	mg/L	0.020	1	03/19/14 15:35	NFP	L193223
TCLP 3&4 Methylphenol	<b>0.104</b>	mg/L	0.040	1	03/19/14 15:35	NFP	L193223
TCLP 2,4-Dinitrotoluene	<0.020	mg/L	0.020	1	03/19/14 15:35	NFP	L193223
TCLP Hexachlorobenzene	<0.020	mg/L	0.020	1	03/19/14 15:35	NFP	L193223
TCLP Hexachlorobutadiene	<0.020	mg/L	0.020	1	03/19/14 15:35	NFP	L193223
TCLP Hexachloroethane	<0.020	mg/L	0.020	1	03/19/14 15:35	NFP	L193223
TCLP Nitrobenzene	<0.020	mg/L	0.020	1	03/19/14 15:35	NFP	L193223
TCLP Pentachlorophenol	<0.040	mg/L	0.040	1	03/19/14 15:35	NFP	L193223
TCLP Pyridine	<0.020	mg/L	0.020	1	03/19/14 15:35	NFP	L193223
TCLP 2,4,5-Trichlorophenol	<0.020	mg/L	0.020	1	03/19/14 15:35	NFP	L193223
TCLP 2,4,6-Trichlorophenol	<0.020	mg/L	0.020	1	03/19/14 15:35	NFP	L193223
Surrogate: TCLP 2,4,6-Tribromophenol	83.9		Limits: 40-125%	1	03/19/14 15:35	NFP	L193223
Surrogate: TCLP 2-Fluorobiphenyl	52.0		Limits: 38-107%	1	03/19/14 15:35	NFP	L193223
Surrogate: TCLP 2-Fluorophenol	25.8		Limits: 20-110%	1	03/19/14 15:35	NFP	L193223
Surrogate: TCLP 4-Terphenyl-d14	63.0		Limits: 33-122%	1	03/19/14 15:35	NFP	L193223
Surrogate: TCLP Nitrobenzene-d5	47.3		Limits: 29-110%	1	03/19/14 15:35	NFP	L193223
Surrogate: TCLP Phenol-d6	19.9		Limits: 10-115%	1	03/19/14 15:35	NFP	L193223

Qualifiers/Definitions	*	Outside QC limit	DF	Dilution Factor
	I	Recovery out of range	MQL	Method Quantitation Limit





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03319  
 City of Dyersburg  
 Mr. Mike Goff  
 P. O. Box 1358  
 Dyersburg , TN 38025

Project Bio-Solids Testing  
 Information :

Report Date : 03/21/2014  
 Received : 3/12/2014

Report Number : 14-071-0245

## REPORT OF ANALYSIS

Lab No : 98493  
 Sample ID : Solids

Matrix: Solids  
 Sampled: 3/12/2014 7:00

Analytical Method: 8082  
 Prep Method: 3546

Prep Batch(es): L192723

Date/Time Prepped: 3/14/2014 08:30:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aroclor 1016	<0.0459	mg/Kg	0.0459	1	03/14/14 21:43	VIC	L192872
Aroclor 1221	<0.0459	mg/Kg	0.0459	1	03/14/14 21:43	VIC	L192872
Aroclor 1232	<0.0459	mg/Kg	0.0459	1	03/14/14 21:43	VIC	L192872
Aroclor 1242	<0.0459	mg/Kg	0.0459	1	03/14/14 21:43	VIC	L192872
Aroclor 1248	<0.0459	mg/Kg	0.0459	1	03/14/14 21:43	VIC	L192872
Aroclor 1254	<0.0459	mg/Kg	0.0459	1	03/14/14 21:43	VIC	L192872
Aroclor 1260	<0.0459	mg/Kg	0.0459	1	03/14/14 21:43	VIC	L192872
Surrogate: Decachlorobiphenyl		61.5	Limits: 25-125%	1	03/14/14 21:43	VIC	L192872
Surrogate: Tetrachloro-m-xylene		50.7	Limits: 25-125%	1	03/14/14 21:43	VIC	L192872

Qualifiers/ Definitions	*	Outside QC limit	DF	Dilution Factor
	I	Recovery out of range	MQL	Method Quantitation Limit

Jan - March 2011



South end of South section only Digesters # 1 , # 2 , # 3

**BACKGROUND INFORMATION/QUESTIONS** FILL IN BELOW

WWTP NAME	City of Dyersburg
WWTP NPDES PERMIT NUMBER	TN0023477
SITE NAME	City of Dyersburg STP
COUNTY	Dyer
E.A.C.	Jackson
SITE TRACKING NUMBER	LA23A0001
LABORATORY NAME	Waypoint
DATE OF ANALYSIS	1/12/17

**SLUDGE/BIOSOLID ANALYSIS LABORATORY RESULTS**

(Attached a copy of the laboratory analysis used for these calculations to this report)

TOTAL KJELDAHL NITROGEN (TKN)	40,700	mg/kg
AMMONIUM NITROGEN (NH <sub>4</sub> -N)	6,100	mg/kg
NITRATE + NITRITE NITROGEN (NO <sub>3</sub> -N + NO <sub>2</sub> -N)	49	mg/kg
NITROGEN FROM SUPPLEMENTAL FERTILIZERS (If Appropriate)	0	lbs/acre
NITROGEN FROM IRRIGATION WATER (If Appropriate)	0	lbs/acre
NITROGEN FROM PREVIOUS CROP (Unless 2 is based on soil testing)	10	lbs/acre
OTHER (If Appropriate) Specify _____	0	lbs/acre

**SELECT CROP TYPE**

(SELECT ONLY ONE)

YES

1 - CORN (GRAIN) EXPECT YIELD 100 - 125 BUSHELS	<input type="checkbox"/>
2 - CORN (GRAIN) EXPECT YIELD 126 - 150 BUSHELS	<input type="checkbox"/>
3 - CORN (SILAGE) EXPECT YIELD 20 TONS	<input type="checkbox"/>
4 - SOYBEANS EXPECT YIELD 30 BUSHELS	<input type="checkbox"/>
5 - SOYBEANS EXPECT YIELD 40 BUSHELS	<input type="checkbox"/>
6- SOYBEANS EXPECT YIELD 50 BUSHELS	<input checked="" type="checkbox"/>
7- WHEAT EXPECT YIELD 40 BUSHELS	<input type="checkbox"/>
8 - SUMMER ANNUAL GRASS EXPECT YIELD 6 TONS (1 CUTTINGS)	<input type="checkbox"/>
9 - HYBRID HAY EXPECT YIELD 8 TONS (4 CUTTINGS)	<input type="checkbox"/>
10 - TALL FESCUE HAY EXPECT YIELD 3 TONS (2 CUTTINGS)	<input type="checkbox"/>
11 - ORCHARD GRASS HAY EXPECT YIELD 4 TONS (2 CUTTINGS)	<input type="checkbox"/>
12 - SORGHUM (GRAIN) EXPECT YIELD 60 BUSHELS	<input type="checkbox"/>
13 - COTTON EXPECT YIELD 1 BALE / ACRE	<input type="checkbox"/>
14 - COTTON EXPECT YIELD 1.5 BALE / ACRE	<input type="checkbox"/>

CROP TYPE (LBS N/ACRE/YEAR)

$$\begin{aligned}
 \text{Gallons/Acre} &= \text{Tons} \times 2000 \div 8.34 \div \% \text{ TS} \\
 &= 5.1 \times 2000 \div 8.34 \div 1.0202 \\
 &= \frac{61,151}{60,545} \text{ gallon/acre}
 \end{aligned}$$



## VOLATILIZATION FACTORS $K_V$

(SELECT ONLY ONE)

- 1 - ARE BIOSOLIDS LIQUID AND SURFACE APPLIED?  
2 - ARE BIOSOLIDS LIQUID AND INJECTED INTO SOIL?  
3 - ARE BIOSOLID DEWATERED AND APPLIED IN ANY MANNER?

YES

VOLATILIZATION FACTORS  $K_V$  =

1

## MINERALIZATION RATE $F_M$

WHAT BIOSOLID PROCESS GENERATE THE FRACTION ( $F_M$ ) OF ORGANIC NITROGEN? (SELECT ONLY ONE)

SELECT PROCESS

- NONE (Unstabilized)   
ALKALINE STABILIZATION   
AEROBIC DIGESTION   
ANAEROBIC DIGESTION   
COMPOSING

SELECTION CHOICE:

1 SELECTED

MINERALIZATION RATE  $F_M$  =

0.3

AGRONOMIC LOADING RATE

5.1

tons/acre



April - June 2017



Tennessee Department of Environment and Conservation - Division of Water Pollution Control

Exhibit B - Agronomic Application Rate Calculations Based on Nitrogen (N)

Revision 05/08/14

South Section north and middle areas Digesters # 4, # 5, # 6

**BACKGROUND INFORMATION/QUESTIONS**

FILL IN BELOW	
WWTP NAME	City of Dyersburg
WWTP NPDES PERMIT NUMBER	TN0023477
SITE NAME	City of Dyersburg STP
COUNTY	Dyer
E.A.C.	Jackson
SITE TRACKING NUMBER	LA23A0001
LABORATORY NAME	Waypoint
DATE OF ANALYSIS	4/6/17

**SLUDGE/BIOSOLID ANALYSIS LABORATORY RESULTS**

(Attached a copy of the laboratory analysis used for these calculations to this report)

TOTAL KJELDAHL NITROGEN (TKN)	29,800	mg/kg
AMMONIUM NITROGEN (NH <sub>4</sub> -N)	29,800	mg/kg
NITRATE + NITRITE NITROGEN (NO <sub>3</sub> -N + NO <sub>2</sub> -N)	0	mg/kg
NITROGEN FROM SUPPLEMENTAL FERTILIZERS (If Appropriate)	0	lbs/acre
NITROGEN FROM IRRIGATION WATER (If Appropriate)	0	lbs/acre
NITROGEN FROM PREVIOUS CROP (Unless 2 is based on soil testing)	10	lbs/acre
OTHER (If Appropriate) Specify _____	0	lbs/acre

**SELECT CROP TYPE**

(SELECT ONLY ONE)	YES
1 - CORN (GRAIN) EXPECT YIELD 100 - 125 BUSHELS	<input type="checkbox"/>
2 - CORN (GRAIN) EXPECT YIELD 126 - 150 BUSHELS	<input type="checkbox"/>
3 - CORN (SILAGE) EXPECT YIELD 20 TONS	<input type="checkbox"/>
4 - SOYBEANS EXPECT YIELD 30 BUSHELS	<input type="checkbox"/>
5 - SOYBEANS EXPECT YIELD 40 BUSHELS	<input type="checkbox"/>
6- SOYBEANS EXPECT YIELD 50 BUSHELS	<input checked="" type="checkbox"/>
7- WHEAT EXPECT YIELD 40 BUSHELS	<input type="checkbox"/>
8 - SUMMER ANNUAL GRASS EXPECT YIELD 6 TONS (1 CUTTINGS)	<input type="checkbox"/>
9 - HYBRID HAY EXPECT YIELD 8 TONS (4 CUTTINGS)	<input type="checkbox"/>
10 - TALL FESCUE HAY EXPECT YIELD 3 TONS (2 CUTTINGS)	<input type="checkbox"/>
11 - ORCHARD GRASS HAY EXPECT YIELD 4 TONS (2 CUTTINGS)	<input type="checkbox"/>
12 - SORGHUM (GRAIN) EXPECT YIELD 60 BUSHELS	<input type="checkbox"/>
13 - COTTON EXPECT YIELD 1 BALE / ACRE	<input type="checkbox"/>
14 - COTTON EXPECT YIELD 1.5 BALE / ACRE	<input type="checkbox"/>

**CROP TYPE (LBS N/ACRE/YEAR) 190**

$$\begin{aligned}
 \text{Gallons/Acre} &= \text{Tons} \times 2000 \div 8.34 \div \% \text{ TS} \\
 &= 2.9 \times 2000 \div 8.34 \div 1.0525 \\
 &= 13,908
 \end{aligned}$$

## VOLATILIZATION FACTORS $K_v$

(SELECT ONLY ONE)

- 1 - ARE BIOSOLIDS LIQUID AND SURFACE APPLIED?  
2 - ARE BIOSOLIDS LIQUID AND INJECTED INTO SOIL?  
3 - ARE BIOSOLID DEWATERED AND APPLIED IN ANY MANNER?

YES

VOLATILIZATION FACTORS  $K_v =$

1

## MINERALIZATION RATE $F_M$

WHAT BIOSOLID PROCESS GENERATE THE FRACTION ( $F_M$ ) OF ORGANIC NITROGEN? (SELECT ONLY ONE)

SELECT PROCESS

- NONE (Unstabilized)   
ALKALINE STABILIZATION   
AEROBIC DIGESTION   
ANAEROBIC DIGESTION   
COMPOSING

SELECTION CHOICE:

1 SELECTED

MINERALIZATION RATE  $F_M =$

0.3

AGRONOMIC LOADING RATE

2.9

tons/acre



July - Sept. 2017



2017 South/middle no bio-solids

North side 2017 July - Sept  
D. gester #7, #8, #9

**BACKGROUND INFORMATION/QUESTIONS** FILL IN BELOW

WWTP NAME	City of Dyersburg
WWTP NPDES PERMIT NUMBER	TN0023477
SITE NAME	City of Dyersburg STP
COUNTY	Dyer
E.A.C.	Jackson
SITE TRACKING NUMBER	LA23A0001
LABORATORY NAME	Waypoint
DATE OF ANALYSIS	8/3/17

**SLUDGE/BIOSOLID ANALYSIS LABORATORY RESULTS**  
(Attached a copy of the laboratory analysis used for these calculations to this report)

TOTAL KJELDAHL NITROGEN (TKN)	49,300	mg/kg
AMMONIUM NITROGEN (NH <sub>4</sub> -N)	2,070	mg/kg
NITRATE + NITRITE NITROGEN (NO <sub>3</sub> -N + NO <sub>2</sub> -N)	221	mg/kg
NITROGEN FROM SUPPLEMENTAL FERTILIZERS (If Appropriate)	0	lbs/acre
NITROGEN FROM IRRIGATION WATER (If Appropriate)	0	lbs/acre
NITROGEN FROM PREVIOUS CROP (Unless 2 is based on soil testing)	10	lbs/acre
OTHER (If Appropriate) Specify _____	0	lbs/acre

SELECT CROP TYPE (SELECT ONLY ONE)		YES
1 - CORN (GRAIN) EXPECT YIELD 100 - 125 BUSHELS		<input type="checkbox"/>
2 - CORN (GRAIN) EXPECT YIELD 126 - 150 BUSHELS		<input type="checkbox"/>
3 - CORN (SILAGE) EXPECT YIELD 20 TONS		<input type="checkbox"/>
4 - SOYBEANS EXPECT YIELD 30 BUSHELS		<input type="checkbox"/>
5 - SOYBEANS EXPECT YIELD 40 BUSHELS		<input type="checkbox"/>
6 - SOYBEANS EXPECT YIELD 50 BUSHELS		<input type="checkbox"/>
7 - WHEAT EXPECT YIELD 40 BUSHELS		<input type="checkbox"/>
8 - SUMMER ANNUAL GRASS EXPECT YIELD 6 TONS (1 CUTTINGS)		<input type="checkbox"/>
9 - HYBRID HAY EXPECT YIELD 8 TONS (4 CUTTINGS)		<input checked="" type="checkbox"/>
10 - TALL FESCUE HAY EXPECT YIELD 3 TONS (2 CUTTINGS)		<input type="checkbox"/>
11 - ORCHARD GRASS HAY EXPECT YIELD 4 TONS (2 CUTTINGS)		<input type="checkbox"/>
12 - SORGHUM (GRAIN) EXPECT YIELD 60 BUSHELS		<input type="checkbox"/>
13 - COTTON EXPECT YIELD 1 BALE / ACRE		<input type="checkbox"/>
14 - COTTON EXPECT YIELD 1.5 BALE / ACRE		<input type="checkbox"/>
<b>CROP TYPE (LBS N/ACRE/YEAR)</b>		<b>400</b>

$$\begin{aligned} \text{Tons/Acre to GPA} &= \text{Tons} \times 2000 \div 8.34 \div \% \text{ TS} \\ &= 12.3 \times 2000 \div 8.34 \div .0272 \\ &= 108,442 \end{aligned}$$



## VOLATILIZATION FACTORS $K_V$

(SELECT ONLY ONE)

- 1 - ARE BIOSOLIDS LIQUID AND SURFACE APPLIED?  
2 - ARE BIOSOLIDS LIQUID AND INJECTED INTO SOIL?  
3 - ARE BIOSOLID DEWATERED AND APPLIED IN ANY MANNER?

YES

- 

VOLATILIZATION FACTORS  $K_V$  =

0.5

## MINERALIZATION RATE $F_M$

WHAT BIOSOLID PROCESS GENERATE THE FRACTION ( $F_M$ ) OF ORGANIC NITROGEN? (SELECT ONLY ONE)

SELECT PROCESS

- NONE (Unstabilized)   
ALKALINE STABILIZATION   
AEROBIC DIGESTION   
ANAEROBIC DIGESTION   
COMPOSING

SELECTION CHOICE:

1 SELECTED

MINERALIZATION RATE  $F_M$  =

0.3

AGRONOMIC LOADING RATE

12.3

tons/acre



OCT. thru Dec. 2017



Tennessee Department of Environment and Conservation - Division of Water Pollution Control

Exhibit B - Agronomic Application Rate Calculations Based on Nitrogen (N)

Revision 05/08/14

Oct. thru Dec 2017 middle section only digesters # 10 / # 11 / # 12

**BACKGROUND INFORMATION/QUESTIONS** FILL IN BELOW

WWTP NAME	City of Dyersburg
WWTP NPDES PERMIT NUMBER	TN0023477
SITE NAME	City of Dyersburg STP
COUNTY	Dyer
E.A.C.	Jackson
SITE TRACKING NUMBER	LA23A0001
LABORATORY NAME	Waypoint
DATE OF ANALYSIS	11/15/17

**SLUDGE/BIOSOLID ANALYSIS LABORATORY RESULTS**  
*(Attached a copy of the laboratory analysis used for these calculations to this report)*

TOTAL KJELDAHL NITROGEN (TKN)	58,300	mg/kg
AMMONIUM NITROGEN (NH <sub>4</sub> -N)	14,700	mg/kg
NITRATE + NITRITE NITROGEN (NO <sub>3</sub> -N + NO <sub>2</sub> -N)	0	mg/kg
NITROGEN FROM SUPPLEMENTAL FERTILIZERS (If Appropriate)	0	lbs/acre
NITROGEN FROM IRRIGATION WATER (If Appropriate)	0	lbs/acre
NITROGEN FROM PREVIOUS CROP (Unless 2 is based on soil testing)	10	lbs/acre
OTHER (If Appropriate) Specify _____	0	lbs/acre

**SELECT CROP TYPE**  
(SELECT ONLY ONE) YES

1 - CORN (GRAIN) EXPECT YIELD 100 - 125 BUSHELS	<input type="checkbox"/>
2 - CORN (GRAIN) EXPECT YIELD 126 - 150 BUSHELS	<input type="checkbox"/>
3 - CORN (SILAGE) EXPECT YIELD 20 TONS	<input type="checkbox"/>
4 - SOYBEANS EXPECT YIELD 30 BUSHELS	<input type="checkbox"/>
5 - SOYBEANS EXPECT YIELD 40 BUSHELS	<input type="checkbox"/>
6 - SOYBEANS EXPECT YIELD 50 BUSHELS	<input checked="" type="checkbox"/>
7 - WHEAT EXPECT YIELD 40 BUSHELS	<input type="checkbox"/>
8 - SUMMER ANNUAL GRASS EXPECT YIELD 6 TONS (1 CUTTINGS)	<input type="checkbox"/>
9 - HYBRID HAY EXPECT YIELD 8 TONS (4 CUTTINGS)	<input type="checkbox"/>
10 - TALL FESCUE HAY EXPECT YIELD 3 TONS (2 CUTTINGS)	<input type="checkbox"/>
11 - ORCHARD GRASS HAY EXPECT YIELD 4 TONS (2 CUTTINGS)	<input type="checkbox"/>
12 - SORGHUM (GRAIN) EXPECT YIELD 60 BUSHELS	<input type="checkbox"/>
13 - COTTON EXPECT YIELD 1 BALE / ACRE	<input type="checkbox"/>
14 - COTTON EXPECT YIELD 1.5 BALE / ACRE	<input type="checkbox"/>

**CROP TYPE (LBS N/ACRE/YEAR) 190**

$$\begin{aligned} \text{Tons/acre to Gallons/acre} &= \text{Tons} \times 2000 \div 8.34 \div \% \text{ TS} \\ &= 3.1 \times 2000 \div 8.34 \div .0164 \\ &= 45,329 \end{aligned}$$

## VOLATILIZATION FACTORS $K_v$

(SELECT ONLY ONE)

- 1 - ARE BIOSOLIDS LIQUID AND SURFACE APPLIED?  
2 - ARE BIOSOLIDS LIQUID AND INJECTED INTO SOIL?  
3 - ARE BIOSOLID DEWATERED AND APPLIED IN ANY MANNER?

YES

- 

VOLATILIZATION FACTORS  $K_v$  =

1

## MINERALIZATION RATE $F_M$

WHAT BIOSOLID PROCESS GENERATE THE FRACTION ( $F_M$ ) OF ORGANIC NITROGEN? (SELECT ONLY ONE)

SELECT PROCESS

- NONE (Unstabilized)   
ALKALINE STABILIZATION   
AEROBIC DIGESTION   
ANAEROBIC DIGESTION   
COMPOSING

SELECTION CHOICE:

1 SELECTED

MINERALIZATION RATE  $F_M$  =

0.3

AGRONOMIC LOADING RATE

3.1

tons/acre