DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102
(615) 532-0625

NOTICE OF INTENT (NOI) for Land Application of Non-Exceptional Quality Biosolids

Generator Name: Chickasaw Trails Wastewater Treatment Plant	Current NPDES No: MS0060046-001	Existing Tracking No:

Owner or Operator: (the person or legal entity which controls the site's operation) Marshall Utility Services

1	Name of Official Contact Person: (individual responsible for a site) Justin Hall	Title or Position: Executive Director		
	Mailing Address: 520 J.M. Ash Drive	City: Holly Springs	State: MS	Zip: 38635
	Phone: ( ) 662.252.3916	E-mail: rwrmts@yahoo.com		
2	Name of Local Contact Person: (if appropriate, write "same as #1") Robert Richmond	Title or Position: Project Manager		
	Site Address: (this may or may not be the same as street address) 1019 Dogwood Road	Site City: Cayce	State: TN MS	Zip: 38611
	Phone: ( ) 901.598.2806	E-mail: rwrmts@yahoo.com		

Write in the box (to the right) or circle the number (above) to indicate where to send correspondence:

All non-exceptional biosolids land application sites that have been approved by the division prior to the effective date of this permit will be covered under this permit upon receipt of the signed certification statement, completed NOI and a copy of site approval letter(s).

A. OPERATIONAL INFORMATION:
Estimated annual amount of biosolids generated (dry weight basis) 30 (tons)
Estimated annual amount of biosolids to be land applied (dry weight basis) 30 (tons)

B. BIOSOLIDS TREATMENT PROCESS: Please provide a description of the biosolids treatment process used prior to biosolids being land applied (use a separate sheet if necessary):

Incoming sewage is screened and transferred to the sequential batch reactor (SBR) where the solids settle to the bottom. The settled solids are transferred to an aerobic digester where the material digested. Effluent water is disinfected and discharged to a tributary of the Nonconnah Creek.

C. CHEMICAL ANALYSIS: Indicate which contaminant standard(s) the biosolids meet:
Table 1 Ceiling Contaminant Concentrations: ☐ **Table 3 Contaminant Concentrations:** ☒

- Submit analytical results to demonstrate eligibility for and compliance with the quality criteria specified in the General Permit.
- Submit PCB and TCLP analytical results that are less five years old.

See attached analysis. The material is non-hazardous and is Table 3 Pollutant Concentration compliant.

D. PATHOGEN REDUCTION LEVEL ACHIEVED: Indicate alternative used to achieve the pathogen reduction. For Class A, Alternatives 5 and 6; for Class B, Alternatives 2 and 3, list the specific Process to Further Reduce Pathogens (PFRP) or Process to Significantly Reduce Pathogens (PSRP).

Class A: ☐ **Alternative 1** ☐ **Alternative 2** ☐ **Alternative 3**
☐ **Alternative 4** ☐ **Alternative 5** _____ ☐ **Alternative 6** _____
(List PFRP) **(List Eq. PFRP)**

Class B: ■ **Alternative 1** ☐ **Alternative 2** _____ ☐ **Alternative 3** _____
(List PSRP) **(List Eq. PSRP)**

Provide a detailed description of the pathogen treatment process. Attach laboratory analytical and/or process monitoring results, as appropriate, that demonstrate pathogen reduction is being achieved:

The settled solids transferred from the sequential batch reactor are aerobically digested onsite resulting in a Class B biosolid as it relates to pathogen reduction.

NOTICE OF INTENT (NOI) for Land Application of Non-Exceptional Quality Biosolids

E. VECTOR ATTRACTION REDUCTION LEVEL ACHIEVED: Indicate the option used to achieve the vector attraction reduction.

☐ **Option 1** ☐ **Option 2** ☐ **Option 3** ☐ **Option 4**
☐ **Option 5** ☐ **Option 6** ☐ **Option 7** ☐ **Option 8**

If one of the vector attraction reduction Options 1 - 5 is selected, do the biosolids meet Class A pathogen reduction requirements prior to or at the same time as meeting the vector attraction reduction requirements?

☐ **Yes** ☐ **No**

Provide a detailed description of the vector attraction reduction treatment process. Attach laboratory analytical and/or process monitoring results, as appropriate, that demonstrate vector attraction reduction is being achieved:

The settled solids transferred from the sequential batch reactor are aerobically digested onsite. Although not initially tested for volatile solids and/or SOUR, an attempt will be made prior to land application to meet either Option 1 or Option 4. If the material fails to meet Option 1 or Option 4, Option 10 will be utilized.

F. If one of the vector attraction reduction Options 1 - 8 above was not performed, indicate how the vector attraction reduction will be performed on the field as part of the land application process:

☐ **Option 9 (Subsurface Injection)** ■ **Option 10 (Incorporation)**

If Option 1 or Option 4 fail, the material will be land applied as a liquid and will be incorporated within 6 hours in accordance with Option 10.

G. SAMPLING PLAN: Include a detailed copy of the biosolids sampling plan as specified in the instructions. The sampling plan must address sampling protocols for contaminants, pathogen reduction, and vector attraction reduction quality criteria.

Due to the small size of the plant and resultant small amount of material generated, the biosolids will be sampled on an event-timed basis and immediately prior to land application.

H. LAND APPLICATION AREA(s): Include a list of land application area(s) that will be used for disposal of biosolids. Attach a detailed map showing appropriate buffers in accordance with section 3.2.1 (add additional pages if necessary)

Area Number	Area (acres)	Application Rate (tons/acre) per section 3.2.2	Latitude (decimal)	Longitude (decimal)
TN-FA-1	~112.5	Bermuda Hay - application rate would be ~8 DryTon/Acre at ~3.5% solids	35.136145	-89.553261

I. CERTIFICATION: I certify, under penalty of law, that contaminant concentrations in the biosolids, pathogen reduction, vector attraction reduction, and other quality criteria of the biosolids stated in the regulations have been met or, if appropriate, will be met prior to land application of biosolids. I further certify that other information in this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my own knowledge as well as the inquiry of the person(s) who manage the system, or those directly responsible for gathering the information, the information submitted, to the best of my knowledge and belief, is true, accurate and complete. I further acknowledge that the facility or generator of biosolids described above is eligible for coverage under TDEC's General Permit for the Land Application of Biosolids. I am aware that there are significant penalties for submitting false information, including possibility of fines and imprisonment for knowing violations. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Name: Robert Richmond **Title:** Plant Manager

Signature:

Telephone: (901) 598 - 2806 **Date Signed:** 06 / 20 / 2017

NOTE: In evaluating NOI forms, TDEC may request additional information to complete its review to determine the eligibility for coverage under TDEC's General Permit.

Submit the original completed and signed form to *Water.Permits@tn.gov* or:
Biosolids NOI Processing - Division of Water Resources
William R. Snodgrass - Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor
Nashville, TN 37243-1102

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DIVISION OF WATER RESOURCES
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Owner or Operator: (the person or legal entity which controls the site's operation) Marshall Utility Services

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	Phone: ( ) 662.252.3916	E-mail: rwrmts@yahoo.com		
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	Site Address: (this may or may not be the same as street address) 1019 Dogwood Road	Site City: Cayce	State: ~~TN~~ MS	Zip: 38611
	Phone: ( ) 901.598.2806	E-mail: rwrmts@yahoo.com		

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Provide a detailed description of the pathogen treatment process. Attach laboratory analytical and/or process monitoring results, as appropriate, that demonstrate pathogen reduction is being achieved:

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E. VECTOR ATTRACTION REDUCTION LEVEL ACHIEVED: Indicate the option used to achieve the vector attraction reduction.

☐ **Option 1** ☐ **Option 2** ☐ **Option 3** ☐ **Option 4**
☐ **Option 5** ☐ **Option 6** ☐ **Option 7** ☐ **Option 8**

If one of the vector attraction reduction Options 1 - 5 is selected, do the biosolids meet Class A pathogen reduction requirements prior to or at the same time as meeting the vector attraction reduction requirements?

☐ **Yes** ☐ **No**

Provide a detailed description of the vector attraction reduction treatment process. Attach laboratory analytical and/or process monitoring results, as appropriate, that demonstrate vector attraction reduction is being achieved:

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Name: _____ **Title:** _____

Signature: _____

Telephone: (___) _____ - _____ **Date Signed:** _____/_____/_____

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www.waypointanalytical.com

02809
Metro Desoto WWTP
Mr. Robert Richmond
11299 Stateline Rd
Olive Branch , MS 38654

Project Information : Chickasaw Trails WWTP

Report Date : 05/24/2017
Received : 5/16/2017

Randall H. Thomas

Randy Thomas
Project Manager

Report Number : **17-136-0254**

REPORT OF ANALYSIS

Lab No : **97353**
Sample ID : **Sludge**

Matrix: **Sludge**
Sampled: **5/15/2017 13:35**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
TCLP Herbicide Extraction	**Combined**			1	05/18/17 17:50	SAJ	SW-1311
TCLP Metals Extraction	**Combined**			1	05/18/17 17:50	SAJ	SW-1311
TCLP Pesticide Extraction	**Combined**			1	05/18/17 17:50	SAJ	SW-1311
TCLP SVOC Extraction	**Combined**			1	05/18/17 17:50	SAJ	SW-1311
TCLP VOC ZHE Extraction	**Combined**			1	05/18/17 18:03	SAJ	SW-1311 (ZHE)

Analytical Method: 6010C **Prep Batch(es):** **L333788** 05/19/17 10:40
Prep Method: 3005A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
TCLP Arsenic	<0.025	mg/L	0.025	1	05/19/17 20:03	KKM	L333998
TCLP Barium	**0.050**	mg/L	0.025	1	05/19/17 20:03	KKM	L333998
TCLP Cadmium	<0.005	mg/L	0.005	1	05/19/17 20:03	KKM	L333998
TCLP Chromium	<0.010	mg/L	0.010	1	05/22/17 17:48	KKM	L334088
TCLP Lead	<0.010	mg/L	0.010	1	05/22/17 17:48	KKM	L334088
TCLP Selenium	<0.050	mg/L	0.050	1	05/19/17 20:03	KKM	L333998
TCLP Silver	<0.005	mg/L	0.005	1	05/19/17 20:03	KKM	L333998

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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REPORT OF ANALYSIS

Lab No : **97353**
Sample ID : **Sludge**

Matrix: **Sludge**
Sampled: **5/15/2017 13:35**

Analytical Method: 7470A **Prep Batch(es):** **L333803** 05/19/17 11:25
Prep Method: 7470A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
TCLP Mercury	<0.0200	mg/L	0.0200	1	05/19/17 16:52	ABC	L333835

Analytical Method: 8081A **Prep Batch(es):** **L334123** 05/22/17 18:00
Prep Method: 3510C

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
TCLP Endrin	<0.001600	mg/L	0.001600	10	05/23/17 01:47	VIC	L334285
TCLP gamma-BHC	<0.001600	mg/L	0.001600	10	05/23/17 01:47	VIC	L334285
TCLP Methoxychlor	<0.001600	mg/L	0.001600	10	05/23/17 01:47	VIC	L334285
TCLP Toxaphene	<0.01200	mg/L	0.01200	10	05/23/17 01:47	VIC	L334285
TCLP Chlordane	<0.008000	mg/L	0.008000	10	05/23/17 01:47	VIC	L334285
TCLP Heptachlor Epoxide	<0.001600	mg/L	0.001600	10	05/23/17 01:47	VIC	L334285
TCLP Heptachlor	<0.001600	mg/L	0.001600	10	05/23/17 01:47	VIC	L334285
Surrogate: Decachlorobiphenyl	82.04		Limits: 36-116%	10	05/23/17 01:47	VIC	L334285
Surrogate: Tetrachloro-m-xylene	41.21		Limits: 25-123%	10	05/23/17 01:47	VIC	L334285

Analytical Method: 8151A **Prep Batch(es):** **L333930** 05/22/17 08:00
Prep Method: 8151A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
TCLP 2,4-D	<0.0200	mg/L	0.0200	1	05/23/17 14:11	VIC	L334303

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Matrix: **Sludge**
Sampled: **5/15/2017 13:35**

Analytical Method: 8151A **Prep Batch(es):** **L333930** 05/22/17 08:00
Prep Method: 8151A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
TCLP 2,4,5-TP (Silvex)	<0.0020	mg/L	0.0020	1	05/23/17 14:11	VIC	L334303
Surrogate: DCAA	48.00		Limits: 20-120%	1	05/23/17 14:11	VIC	L334303

Analytical Method: 8260B **Prep Batch(es):** **L333973** 05/20/17 12:09
Prep Method: 5030B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
TCLP Benzene	<0.0100	mg/L	0.0100	1	05/20/17 19:21	LAT	L334002
TCLP Carbon Tetrachloride	<0.0100	mg/L	0.0100	1	05/20/17 19:21	LAT	L334002
TCLP Chlorobenzene	<0.0100	mg/L	0.0100	1	05/20/17 19:21	LAT	L334002
TCLP Chloroform	<0.0100	mg/L	0.0100	1	05/20/17 19:21	LAT	L334002
TCLP 1,4-Dichlorobenzene	<0.0100	mg/L	0.0100	1	05/20/17 19:21	LAT	L334002
TCLP 1,2-Dichloroethane	<0.0100	mg/L	0.0100	1	05/20/17 19:21	LAT	L334002
TCLP 1,1-Dichloroethene	<0.0100	mg/L	0.0100	1	05/20/17 19:21	LAT	L334002
TCLP Methyl Ethyl Ketone (MEK)	<0.200	mg/L	0.200	1	05/20/17 19:21	LAT	L334002
TCLP Tetrachloroethene	<0.0100	mg/L	0.0100	1	05/20/17 19:21	LAT	L334002
TCLP Trichloroethene	<0.0100	mg/L	0.0100	1	05/20/17 19:21	LAT	L334002
TCLP Vinyl Chloride	<0.0100	mg/L	0.0100	1	05/20/17 19:21	LAT	L334002
Surrogate: 4-Bromofluorobenzene	98.4		Limits: 71-137%	1	05/20/17 19:21	LAT	L334002
Surrogate: Dibromofluoromethane	95.4		Limits: 70-128%	1	05/20/17 19:21	LAT	L334002
Surrogate: 1,2-Dichloroethane - d4	88.8		Limits: 63-136%	1	05/20/17 19:21	LAT	L334002
Surrogate: Toluene-d8	95.4		Limits: 70-130%	1	05/20/17 19:21	LAT	L334002

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Randy Thomas
Project Manager

Report Number : **17-136-0254**

REPORT OF ANALYSIS

Lab No : **97353**
Sample ID : **Sludge**

Matrix: **Sludge**
Sampled: **5/15/2017 13:35**

Analytical Method: 8270C **Prep Batch(es):** **L334021** 05/22/17 11:00
Prep Method: 3510C

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
TCLP 2-Methylphenol	<0.020	mg/L	0.020	1	05/22/17 16:16	CGC	L334103
TCLP 3&4 Methylphenol	<0.040	mg/L	0.040	1	05/22/17 16:16	CGC	L334103
TCLP 2,4-Dinitrotoluene	<0.020	mg/L	0.020	1	05/22/17 16:16	CGC	L334103
TCLP Hexachlorobenzene	<0.020	mg/L	0.020	1	05/22/17 16:16	CGC	L334103
TCLP Hexachlorobutadiene	<0.020	mg/L	0.020	1	05/22/17 16:16	CGC	L334103
TCLP Hexachloroethane	<0.020	mg/L	0.020	1	05/22/17 16:16	CGC	L334103
TCLP Nitrobenzene	<0.020	mg/L	0.020	1	05/22/17 16:16	CGC	L334103
TCLP Pentachlorophenol	<0.040	mg/L	0.040	1	05/22/17 16:16	CGC	L334103
TCLP Pyridine	<0.020	mg/L	0.020	1	05/22/17 16:16	CGC	L334103
TCLP 2,4,5-Trichlorophenol	<0.020	mg/L	0.020	1	05/22/17 16:16	CGC	L334103
TCLP 2,4,6-Trichlorophenol	<0.020	mg/L	0.020	1	05/22/17 16:16	CGC	L334103
Surrogate: TCLP 2,4,6-Tribromophenol	52.6		Limits: 40-125%	1	05/22/17 16:16		L334103
Surrogate: TCLP 2-Fluorobiphenyl	49.5		Limits: 38-107%	1	05/22/17 16:16		L334103
Surrogate: TCLP 2-Fluorophenol	26.9		Limits: 20-110%	1	05/22/17 16:16		L334103
Surrogate: TCLP 4-Terphenyl-d14	74.3		Limits: 33-122%	1	05/22/17 16:16		L334103
Surrogate: TCLP Nitrobenzene-d5	54.3		Limits: 29-110%	1	05/22/17 16:16		L334103
Surrogate: TCLP Phenol-d6	21.0		Limits: 10-115%	1	05/22/17 16:16		L334103

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Olive Branch , MS 38654

Project Information : Chickasaw Trails WWTP
Digester Sludge

Report Date : 5/30/2017

Report Number : **17-143-0275**

REPORT OF ANALYSIS

Received : 5/23/2017

Lab No : **93502**
Sample ID : **Grab 1**

Matrix: **Solids**
Sampled: **5/23/2017 8:06**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Fecal Coliform MPN/g	**333000**	MPN/g - dry	90900	1	05/23/17 14:40	SBA	9221E-2011
% Moisture	**96.7**	%	0.100	1	05/24/17 15:02	CJR	2540G-2011

Lab No : **93503**
Sample ID : **Grab 2**

Matrix: **Solids**
Sampled: **5/23/2017 8:06**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Fecal Coliform MPN/g	<83300	MPN/g - dry	83300	1	05/23/17 14:40	SBA	9221E-2011
% Moisture	**96.4**	%	0.100	1	05/24/17 15:02	CJR	2540G-2011

Lab No : **93504**
Sample ID : **Grab 3**

Matrix: **Solids**
Sampled: **5/23/2017 8:06**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Fecal Coliform MPN/g	**164000**	MPN/g - dry	53600	1	05/23/17 14:40	SBA	9221E-2011
% Moisture	**94.4**	%	0.100	1	05/24/17 15:02	CJR	2540G-2011

Lab No : **93505**
Sample ID : **Grab 4**

Matrix: **Solids**
Sampled: **5/23/2017 8:06**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Fecal Coliform MPN/g	<81100	MPN/g - dry	81100	1	05/23/17 14:40	SBA	9221E-2011
% Moisture	**96.3**	%	0.100	1	05/24/17 15:02	CJR	2540G-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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2790 Whitten Road, Memphis, TN 38133
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02809
Metro Desoto WWTP
Mr. Robert Richmond
11299 Stateline Rd
Olive Branch , MS 38654

Project Information : Chickasaw Trails WWTP
Digester Sludge

Report Date : 5/30/2017

Report Number : **17-143-0275**

REPORT OF ANALYSIS

Received : 5/23/2017

Lab No : **93506**
Sample ID : **Grab 5**

Matrix: **Solids**
Sampled: **5/23/2017 8:06**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Fecal Coliform MPN/g	**796000**	MPN/g - dry	55600	1	05/23/17 14:40	SBA	9221E-2011
% Moisture	**94.6**	%	0.100	1	05/24/17 15:02	CJR	2540G-2011

Lab No : **93507**
Sample ID : **Grab 6**

Matrix: **Solids**
Sampled: **5/23/2017 8:06**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Fecal Coliform MPN/g	**65500**	MPN/g - dry	54500	1	05/23/17 14:40	SBA	9221E-2011
% Moisture	**94.5**	%	0.100	1	05/24/17 15:02	CJR	2540G-2011

Lab No : **93508**
Sample ID : **Grab 7**

Matrix: **Solids**
Sampled: **5/23/2017 8:06**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Fecal Coliform MPN/g	<88200	MPN/g - dry	88200	1	05/23/17 14:40	SBA	9221E-2011
% Moisture	**96.6**	%	0.100	1	05/24/17 15:02	CJR	2540G-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

Geometric Mean Calculation

Date: 5/30/2017

Analyst: C. Cook

Report Number: 17-143-0275

			Measured Values			Conversion to Dry Weight	
#	Sample Number		MPN Index Value	Highest ml used	% moisture	% solids	Dry Weight MPN/g
1	L	93502	11,000.0	0.001	96.7	0.03	333,333
2	L	93503	2,999.0	0.001	96.4	0.04	83,306
3	L	93504	9,200.0	0.001	94.4	0.06	164,286
4	L	93505	2,999.0	0.001	96.3	0.04	81,054
5	L	93506	43,000.0	0.001	94.6	0.05	796,296
6	L	93507	3,600.0	0.001	94.5	0.06	65,455
7	L	93508	2,999.0	0.001	96.6	0.03	88,206

Geometric Mean (using above values) 149,891.5

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6/15/2017

Metro Desoto WWTP
Mr. Robert Richmond
11299 Stateline Rd
Olive Branch, MS, 38654

Ref: Analytical Testing
Lab Report Number: 17-160-0296
Client Project Description: Chickasaw Trails WWTP

Dear Mr. Robert Richmond:
Waypoint Analytical, Inc. received sample(s) on 6/9/2017 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2012) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randall H. Thomas

Randy Thomas
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#2904	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41		

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02809
Metro Desoto WWTP
Mr. Robert Richmond
11299 Stateline Rd
Olive Branch , MS 38654

Project Information : Chickasaw Trails WWTP

Report Date : 6/15/2017

Report Number : **17-160-0296**

REPORT OF ANALYSIS

Received : 6/9/2017

Lab No : **96879**
Sample ID : **Digester Sludge**

Matrix: **Solids**
Sampled: **6/8/2017 13:03**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Aroclor 1016	<0.0749	mg/Kg	0.0749	1	06/15/17 04:10	VIC	8082
Aroclor 1221	<0.0749	mg/Kg	0.0749	1	06/15/17 04:10	VIC	8082
Aroclor 1232	<0.0749	mg/Kg	0.0749	1	06/15/17 04:10	VIC	8082
Aroclor 1242	<0.0749	mg/Kg	0.0749	1	06/15/17 04:10	VIC	8082
Aroclor 1248	<0.0749	mg/Kg	0.0749	1	06/15/17 04:10	VIC	8082
Aroclor 1254	<0.0749	mg/Kg	0.0749	1	06/15/17 04:10	VIC	8082
Aroclor 1260	<0.0749	mg/Kg	0.0749	1	06/15/17 04:10	VIC	8082
Surrogate: Decachlorobiphenyl	63.1		Limits: 25-125%	1	06/15/17 04:10	VIC	8082
Surrogate: Tetrachloro-m-xylene	93.8		Limits: 25-125%	1	06/15/17 04:10	VIC	8082

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

Waypoint ANALYTICAL

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Cooler Receipt Form

Customer Number: **02809**
Customer Name: **Metro Desoto WWTP**
Report Number: **17-160-0296**

Shipping Method

○ Fed Ex	○ US Postal	● Lab	○ Other :	
○ UPS	○ Client	○ Courier	Thermometer ID:	#8

Shipping container/cooler uncompromised?	● Yes	○ No	
Number of coolers received	1		
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	○ Yes	○ No	● N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr)
☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d)
☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included?	○ Yes	● No

Comments:

Signature: Kristina A. McAdams Date & Time: 06/09/2017 13:51:04

CHAIN OF CUSTODY RECORD

17-160-0296
02809
06-09-2017
13:48:18
Metro Desoto WWTP
Chickasaw Trails WWTP

Work Orde

Company Name	Phone#: 662-893-0773	Fax Results	
Mitchell Technical Services, Inc.	Email: rwrmts@yahoo.com	RUSH	
Project/Site:	FID#:	Ice	
Chickasaw Trails WWTP	PA#: 5500		
Project #:	Matrix: 1 Wastewater, 2 Aqueous, 3 Soil/Sediment, 4 Sludge, 5 Oil/Solvent, 6 Other		
Project Manager/Contact: **Robert Richmond**			

# of cont.	Sample ID/Number	Depth	Sample Date	Sample Time	Matrix	Type Grab/Comp	BOD	TSS	NH_3-N	Total PCB							Preservation
							Analysis Requested (Note special detection limits or methods)										
1	Digester Sludge		6/8/17	1303	WW	Grab				X							Cool <6°C

Sampled By: RWR
Method of Shipment: Courier
Remarks:

RELINQUSHED BY (sign)	DATE 6/9/17	TIME 1200	RECEIVED BY (sign)	DATE 6.9.17	TIME 1200
RELINQUSHED BY (sign)	DATE	TIME	RECEIVED BY (sign)	DATE	TIME
RELINQUSHED BY (sign) 6.9.17	DATE	TIME 1310	RECEIVED BY LAB (print/sign) 6/9/17	DATE	TIME 1310

Sample Delivery

T8 2.1°C FedEx B

Waypoint ANALYTICAL

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4/5/2017

Metro Desoto WWTP
Mr. Robert Richmond
11299 Stateline Rd
Olive Branch, MS, 38654

Ref: Analytical Testing
Lab Report Number: 17-083-0254
Client Project Description: Chickasaw Trails

Dear Mr. Robert Richmond:
Waypoint Analytical, Inc. received sample(s) on 3/24/2017 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2012) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randall H. Thomas

Randy Thomas
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#2904	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41		

nelac

Waypoint ANALYTICAL

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Main 901.213.2400 ° Fax 901.213.2440
www.waypointanalytical.com

Client: Metro Desoto WWTP
Project: Chickasaw Trails
Lab Report Number: 17-083-0254
Date: 4/5/2017

CASE NARRATIVE

All analytes are being reported on a dry weight basis and as received basis.

Waypoint ANALYTICAL

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02809
Metro Desoto WWTP
Mr. Robert Richmond
11299 Stateline Rd
Olive Branch , MS 38654

Project Information : Chickasaw Trails

Report Date : 4/5/2017

Report Number : **17-083-0254**

REPORT OF ANALYSIS

Received : 3/24/2017

Lab No : **96266**
Sample ID : **Digester**

Matrix: **Solids**
Sampled: **3/23/2017 10:04**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	**96.5**	%	0.100	1	03/27/17 16:33	CJR	2540G-2011
Ammonia Nitrogen	**89.0**	mg/Kg	25.0	1	04/04/17 09:00	ZBD	4500NH3C-2011
Biochemical Oxygen Demand (5-day)	**6670**	mg/Kg	1200	1	03/24/17 11:03	DB2	5210B-2011
COD (Chemical Oxygen Demand)	**20300**	mg/Kg	3000	20	03/27/17 09:00	SNB	5220D-2011
Nitrate (NO3-N)	**20.9**	mg/Kg	1.00	1	03/31/17 18:32	BKN	9056
HEM: Oil and Grease	<1210	mg/Kg	1210	1	04/03/17 09:00	SMS	SW-9071B
pH	**6.7**	s.u.		1	03/23/17 10:04	FLD	FIELD ~
Total Solids	**3.50**	%	0.100	1	03/27/17 16:33	CJR	2540G-2011
Total Kjeldahl Nitrogen	**1140**	mg/Kg	50.0	1	04/04/17 14:25	CLP	4500NORGD-201
Total Phosphorus	**336**	mg/Kg	25.0	1	04/04/17 14:27	CLP	365.4
Total Arsenic	<1.00	mg/Kg	1.00	1	04/03/17 22:08	KKM	6010C
Total Cadmium	<0.100	mg/Kg	0.100	1	04/03/17 22:08	KKM	6010C
Total Chromium	**1.73**	mg/Kg	0.250	1	04/03/17 22:08	KKM	6010C
Total Copper	**28.2**	mg/Kg	0.250	1	04/03/17 22:08	KKM	6010C
Total Lead	**0.941**	mg/Kg	0.300	1	04/03/17 22:08	KKM	6010C
Mercury (Total)	<0.0133	mg/Kg	0.0133	1	03/27/17 13:57	ABC	7471A
Total Molybdenum	<0.250	mg/Kg	0.250	1	04/03/17 22:08	KKM	6010C
Total Nickel	**1.19**	mg/Kg	0.250	1	04/03/17 22:08	KKM	6010C
Total Potassium	**116**	mg/Kg	5.00	1	04/03/17 22:08	KKM	6010C
Total Selenium	<1.00	mg/Kg	1.00	1	04/03/17 22:08	KKM	6010C
Total Silver	<0.250	mg/Kg	0.250	1	04/03/17 22:08	KKM	6010C
Total Zinc	**32.4**	mg/Kg	0.500	1	04/03/17 22:08	KKM	6010C

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

Waypoint ANALYTICAL

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02809
Metro Desoto WWTP
Mr. Robert Richmond
11299 Stateline Rd
Olive Branch , MS 38654

Project Information : Chickasaw Trails

Report Date : 4/5/2017

Report Number : **17-083-0254**

REPORT OF ANALYSIS

Received : 3/24/2017

Lab No : **96266**
Sample ID : **Digester**

Matrix: **Solids**
Sampled: **3/23/2017 10:04**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	**96.5**	%	0.100	1	03/27/17 16:33	CJR	2540G-2011
Ammonia Nitrogen	**2540**	mg/Kg - dry	714	1	04/04/17 09:00	ZBD	4500NH3C-2011
Biochemical Oxygen Demand (5-day)	**191000**	mg/Kg - dry	34300	1	03/24/17 11:03	DB2	5210B-2011
COD (Chemical Oxygen Demand)	**580000**	mg/Kg - dry	85700	20	03/27/17 09:00	SNB	5220D-2011
Nitrate (NO3-N)	**597**	mg/Kg - dry	28.6	1	03/31/17 18:32	BKN	9056
HEM: Oil and Grease	<34600	mg/Kg - dry	34600	1	04/03/17 09:00	SMS	SW-9071B
pH	**6.7**	s.u.		1	03/23/17 10:04	FLD	FIELD ~
Total Solids	**3.50**	%	0.100	1	03/27/17 16:33	CJR	2540G-2011
Total Kjeldahl Nitrogen	**32600**	mg/Kg - dry	1430	1	04/04/17 14:25	CLP	4500NORGD-201
Total Phosphorus	**9600**	mg/Kg - dry	714	1	04/04/17 14:27	CLP	365.4
Total Arsenic	<28.6	mg/Kg - dry	28.6	1	04/03/17 22:08	KKM	6010C
Total Cadmium	<2.86	mg/Kg - dry	2.86	1	04/03/17 22:08	KKM	6010C
Total Chromium	**49.4**	mg/Kg - dry	7.14	1	04/03/17 22:08	KKM	6010C
Total Copper	**806**	mg/Kg - dry	7.14	1	04/03/17 22:08	KKM	6010C
Total Lead	**26.9**	mg/Kg - dry	8.57	1	04/03/17 22:08	KKM	6010C
Mercury (Total)	<0.380	mg/Kg - dry	0.380	1	03/27/17 13:57	ABC	7471A
Total Molybdenum	<7.14	mg/Kg - dry	7.14	1	04/03/17 22:08	KKM	6010C
Total Nickel	**34.0**	mg/Kg - dry	7.14	1	04/03/17 22:08	KKM	6010C
Total Potassium	**3310**	mg/Kg - dry	143	1	04/03/17 22:08	KKM	6010C
Total Selenium	<28.6	mg/Kg - dry	28.6	1	04/03/17 22:08	KKM	6010C
Total Silver	<7.14	mg/Kg - dry	7.14	1	04/03/17 22:08	KKM	6010C
Total Zinc	**926**	mg/Kg - dry	14.3	1	04/03/17 22:08	KKM	6010C

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

Waypoint ANALYTICAL

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Cooler Receipt Form

Customer Number: **02809**
Customer Name: **Metro Desoto WWTP**
Report Number: **17-083-0254**

Shipping Method

○ Fed Ex	○ US Postal	● Lab	○ Other :	
○ UPS	○ Client	○ Courier	Thermometer ID:	#10

Shipping container/cooler uncompromised?	● Yes	○ No	
Number of coolers received	1		
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	● Yes	○ No	○ N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Rebekah Ross Date & Time: 03/24/2017 12:57:57

Waypoint ANALYTICAL

2790 Whitten Road Memphis TN 38133

CHAIN-OF-CUSTOI

17-083-0254
02809
03-24-2017
12:57:39
Metro Desoto WWTP
Chickasaw Trails

Kit ID:	0000078727
Initiated By:	Randy Thomas
Project Commment	

Company Name	Company Number	Client Project Manager/Contact	Purchase Order Number
Mitchell Technical Services ~~Metro Desoto WWTP~~	02809	Metro Desoto WWTP	54108
Site Name	**Project Number**	☐ RUSH -- Additional charges apply ☐ Special Detection Limits(s) Date Results Needed	**Method of Shipment** ☐ Fed Ex ☐ UPS ☐ USPS ☐ Courier ☐ Client Drop Off Other
Chickasaw Trails ~~Sites Hauled Waste~~			
LIMS Project ID	**Project Manager Phone #**	**Project Manager Email**	**Site/Facility ID #**
	(662) 893-0773		

Date	Time	Sample ID	Matrix	Grab/ Comp	# of Cont	Container Type	Preservation	Analyses
3/23/17	1004	Digester	Aqueous	G	1	Plastic - Pint	NONE	pH/TSS/BOD
3/23/17	1004	Digester	Aqueous	G	1	Plastic - Pint	H2SO4 - Sulfuric Acid	COD
3/23/17	1004	Digester	Aqueous	G	1	Plastic - Pint	HNO3 - Nitric Acid	As/Cd/Cr/Cu/Pb/Hg/Ni/Ag/Zn
3/23/17	1004	Digester	Aqueous	G	1	Glass - 4oz	H2SO4 - Sulfuric Acid	O&G

For Laboratory Use Only			Sampled by (Name - Print)	Client Remarks/Comments
Ice	Custody Seals	Lab Comments	RWR	Sample pH is 6.7
Y/N	Y/N			
Blank/Cooler Temp				
1.0c°	T-10			

Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
	3/24/17	1215		3241	1215
Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
	3241	1240		3241	1240

1/1

August 10, 2017

Jeff Retzke
Denali Water Solutions
35 Refreshment Place
Decatur, AL 35601

We appreciate the opportunity to provide our services to you on this project. Please find attached the data for the sample(s) listed below:

LabNumber	Sample Description	Date/Time Collected	Date Submitted
1710800-01	Outflow Sludge Holding Tank	8/3/17 11:35	8/3/17

ENERSOLV is accredited to ISO/IEC 17025:2005 by Laboratory Accreditation Bureau and to the TNI 2003 Standard by the Florida Department of Health. Our quality system also meets relevant quality system requirements of ISO 9001:2008. Not all tests performed by *ENERSOLV* are covered by these accreditations. Tests within our scope of accreditation are indicated by an asterisk (*) in the Test Result section of this report. Tests not included in the accreditations are performed in accordance with *ENERSOLV* Standard Operating Procedures and the quality control program using, where applicable, USEPA methodology.

This cover page and the attached chain-of-custody record(s) are integral parts of your report. *ENERSOLV* considers this report your official record. This information shall remain in *ENERSOLV*'s active database for a period of one (1) calendar year before archiving. Any replacement of this information after archiving may result in an administrative fee to cover the cost of retrieval.

If you have any questions or would like more information regarding these analyses, please call us at (256) 350-0846.

Karen Sutton
Vice President Client Services

SAMPLE RESULTS REPORT

Report Date/Time: 08/10/2017 11:33

REPORT TO

Jeff Retzke
Denali Water Solutions
35 Refreshment Place
Decatur, AL 35601

NELAP Accredited Florida DOH #E871078

ENERSOLV maintains National Environmental Laboratory Accreditation Program (NELAP) accreditation through Florida Department of Health (#E871078). Some tests included in this report may not be covered by this accreditation.

ENERSOLV also maintains ISO/IEC 17025 accreditation through Laboratory Accreditation Bureau for the specific tests listed in L-A-B Certificate #L2239 scope of accreditation.

Tests within the scope of accreditation are indicated by an asterisk (*).

Cert# L2239 Testing

ADEM Drinking Water Certification No. 40160

Analyte Name	Result	Units	Qual	Regulatory Limit
Sample Point: Outflow Sludge Holding Tank	**Sample ID: 1710800-01**	**Collected: 08/03/2017**		**Submitted: 08/03/2017**
Inorganics				
Specific Oxygen Consumption Rate	0.899	(mg/g)/h (dw)		

SAMPLE RESULTS REPORT

Report Date/Time: 08/10/2017 11:33

REPORT TO

Jeff Retzke
Denali Water Solutions
35 Refreshment Place
Decatur, AL 35601

NELAP Accredited Florida DOH #E871078

ENERSOLV maintains National Environmental Laboratory Accreditation Program (NELAP) accreditation through Florida Department of Health (#E871078). Some tests included in this report may not be covered by this accreditation.

ENERSOLV also maintains ISO/IEC 17025 accreditation through Laboratory Accreditation Bureau for the specific tests listed in L-A-B Certificate #L2239 scope of accreditation.

Tests within the scope of accreditation are indicated by an asterisk (*).

Cert# L2239 Testing

ADEM Drinking Water Certification No. 40160

All calculations are performed prior to rounding per EPA and *Standard Methods* requirements.

Data Qualifiers:

< Less than reporting limit

Analysis Information

Lab Number	Analysis	SpecificMethod	Analyst	Analysis Start Date/Time	Analysis End Date/Time
1710800-01	Specific Oxygen Uptake Rate	SM 2710B	SH	08/03/2017 15:25	

The results contained in this report are only representative of the sample(s) received.

ENERSOLV
a Solutions Company

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD
2220 BELTLINE ROAD SW DECATUR, ALABAMA 35601
(256) 350-0846

www.enersolv.com

PAGE	1	of	1

COMPANY/CLIENT NAME	CLIENT P.O. NUMBER	ENERSOLV PROJECT NUMBER
Denali Water	1619	
CLIENT POINT OF CONTACT	**CLIENT PHYSICAL ADDRESS**	**CITY/STATE/ZIP**
Jeff Retzke	35 Refreshment Place	Decatur, AL 35601
CLIENT EMAIL	**PHONE NUMBER**	**OTHER INFORMATION**
jeff.retzke@denaliwater.com	2565034300	Chickasaw Trails WWTP, Caycee, MS
SAMPLE COLLECTED BY	**EXPEDITED REPORT DELIVERY (SURCHARGE)**	
Jeff Retzke	DATE DUE (REQUIRED)	

ENERSOLV LAB NUMBER	SAMPLE DESCRIPTION	SAMPLE TRANSFER/GRAB DATE	SAMPLE TRANSFER/GRAB TIME	GRAB	COMP	SOUR
17/0800-01	Outflow Sludge Holidng Tank	8/3/2017	11:35	x		x

REQUESTED ANALYSES

Comments:

Collector to complete shaded areas, as applicable

SAMPLE TEMPERATURE RECEIVED @ _____

SAMPLER INFORMATION		**FIELD INFORMATION**								Qty	Type	Parameter	
Start Date		pH mg/l		TRC mg/l		DO mg/l		Temp deg C					
Start Time		Date		Date		Date		Date					
Stop Date		Time		Time		Time		Time					
Stop Time		Analyst		Analyst		Analyst		Analyst					
		SM 4500H+B		SM 4500-Cl D		SM 4500-O G		SM 2550B					

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	8/3/17	14:04						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	SAMPLE STATUS:
	8-3-17	1404	☑ Accepted ☐ Rejected ☐ Accepted with Exception

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

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

Revision 05/08/14

BACKGROUND INFORMATION/QUESTIONS	FILL IN BELOW
WWTP NAME	Chickasaw Trails
WWTP NPDES PERMIT NUMBER	MS0060046
SITE NAME	Nuckolls Farm
COUNTY	Fayette
E.A.C.	
SITE TRACKING NUMBER	N/A
LABORATORY NAME	Waypoint Analytical, Memphis
DATE OF ANALYSIS	4/5/17

SLUDGE/BIOSOLID ANALYSIS LABORATORY RESULTS

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

TOTAL KJELDAHL NITROGEN (TKN)	**32,600**	mg/kg
AMMONIUM NITROGEN (NH_4-N)	**2,540**	mg/kg
NITRATE + NITRITE NITROGEN (NO_3-N + NO_2-N)	**597**	mg/kg
NITROGEN FROM SUPPLEMENTAL FERTILIZERS (If Appropriate)		lbs/acre
NITROGEN FROM IRRIGATION WATER (If Appropriate)		lbs/acre
NITROGEN FROM PREVIOUS CROP (Unless 2 is based on soil testing)		lbs/acre
OTHER (If Appropriate) Specify _____		lbs/acre

SELECT CROP TYPE

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

CROP TYPE (LBS N/ACRE/YEAR)	200

VOLATILIZATION FACTORS K_V

(SELECT ONLY ONE)	YES
1 - ARE BIOSOLIDS LIQUID AND SURFACE APPLIED?	☑
2 - ARE BIOSOLIDS LIQUID AND INJECTED INTO SOIL?	☐
3 - ARE BIOSOLID DEWATERED AND APPLIED IN ANY MANNER?	☐

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 8.7 tons/acre

Denali
WATER SOLUTIONS

3308 Bernice Avenue
Russellville, AR 72802
PO Box 3036 • Russellville, AR 72811
Phone: 479-498-0500

CONSENT FOR BIOSOLIDS USE

Site/Farm Location: Nuckols Rd Fayette County

Acreage: 120 Crop: Bermuda

I, _____(Owner), agree to accept biosolids (a by-product of waste water treatment plants) for use as a soil amendment/fertilizer on the above described property from Denali Water LLC (Denali). I understand that Denali will coordinate biosolids deliveries with my farm operator (leasee) hereinafter unless otherwise advised by me. I also certify that I am the holder of legal title to the above described property or authorized by the holder to give consent for the land application of biosolids.

I understand that the following conditions apply to my land following biosolids applications and that I and/or my farm operator (leasee) will be responsible for following these conditions where applicable:

a. Animals shall not be allowed to graze on the land for 30 days after application of biosolids.
b. Food crops (crops consumed by humans including but not limited to fruits, vegetables and tobacco) with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after the application of biosolids.
c. Food crops (crops consumed by humans including but not limited to fruits, vegetables and tobacco) with harvested parts below the surface of the land shall not be harvested for 20 months after the application of biosolids when the biosolids remain on the land surface ≥ 4 months prior to incorporation into the soil, or 38 months when the biosolids remain on the land surface < 4 months prior to incorporation.
d. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after the application of biosolids.
e. Turf grown on land where biosolids is applied shall not be harvested for one year after application of the biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the permitting authority.
f. Public access to land with a high potential for public exposure shall be limited for one year after application of biosolids. Public access to land with a low potential for public exposure shall be limited for 30 days after application of biosolids.

I agree to allow Denali and/or any biosolids regulatory staff to access my property for the purpose of permitting, inspecting, applying, or any biosolids related activity. I reserve the right to ask the above parties for proper identification at any time. The term of this Consent shall continue until written notification is given by either party to terminate this agreement. The landowner and tenant retain complete control over the referenced lands.

Carl Nuckolls
Owner Name (Please Print)

17573 Algonquin Ct
Address

Fountain Hills, AZ 85268
City, County, State, Zip

_____
Phone Number

Carl Nuckolls 5/6/17
Signature **Date**

Jamerson Farms
Operator/Leasee Name (Please Print)

PO Box 339
Address

Russellville TN 38066
City, County, State, Zip

901-485-5511
Phone Number

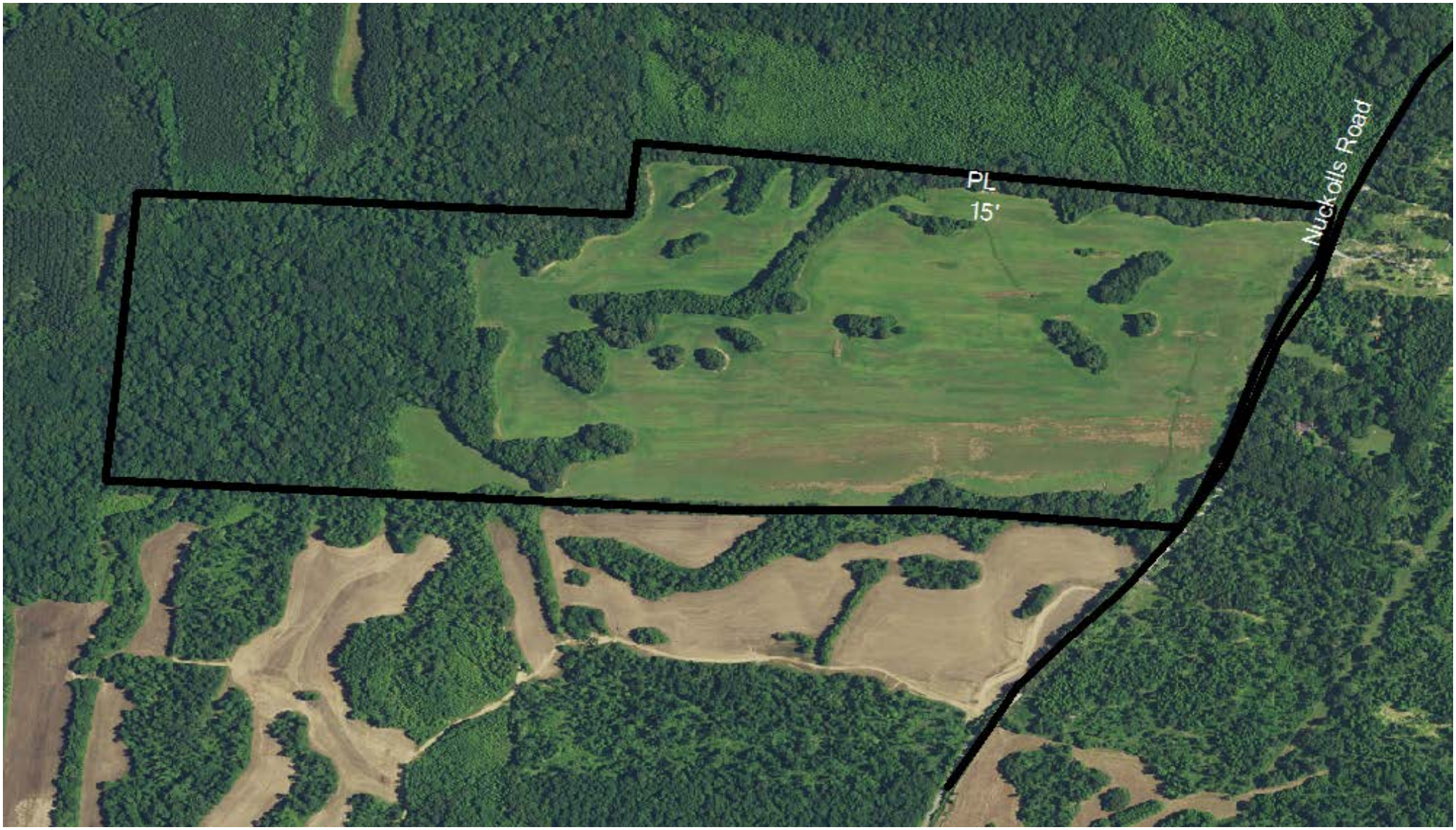
_____
Signature **Date**

Denali WATER SOLUTIONS

3308 Bernice Avenue
Russellville, AR 72802
PO Box 3036 • Russellville, AR 72811
Phone: 479-498-0500

N

0 500 1000 1500 2000
Scale in Feet



Owner:	Carl Nuckolls
Operator:	Jamerson Farms
Address:	Farm - Nuckolls Road
	Macon, TN
Phone:	Jamerson - 901-485-5516

Property Line	~
ortho_1-1_1n_s_tn047_2016_1	

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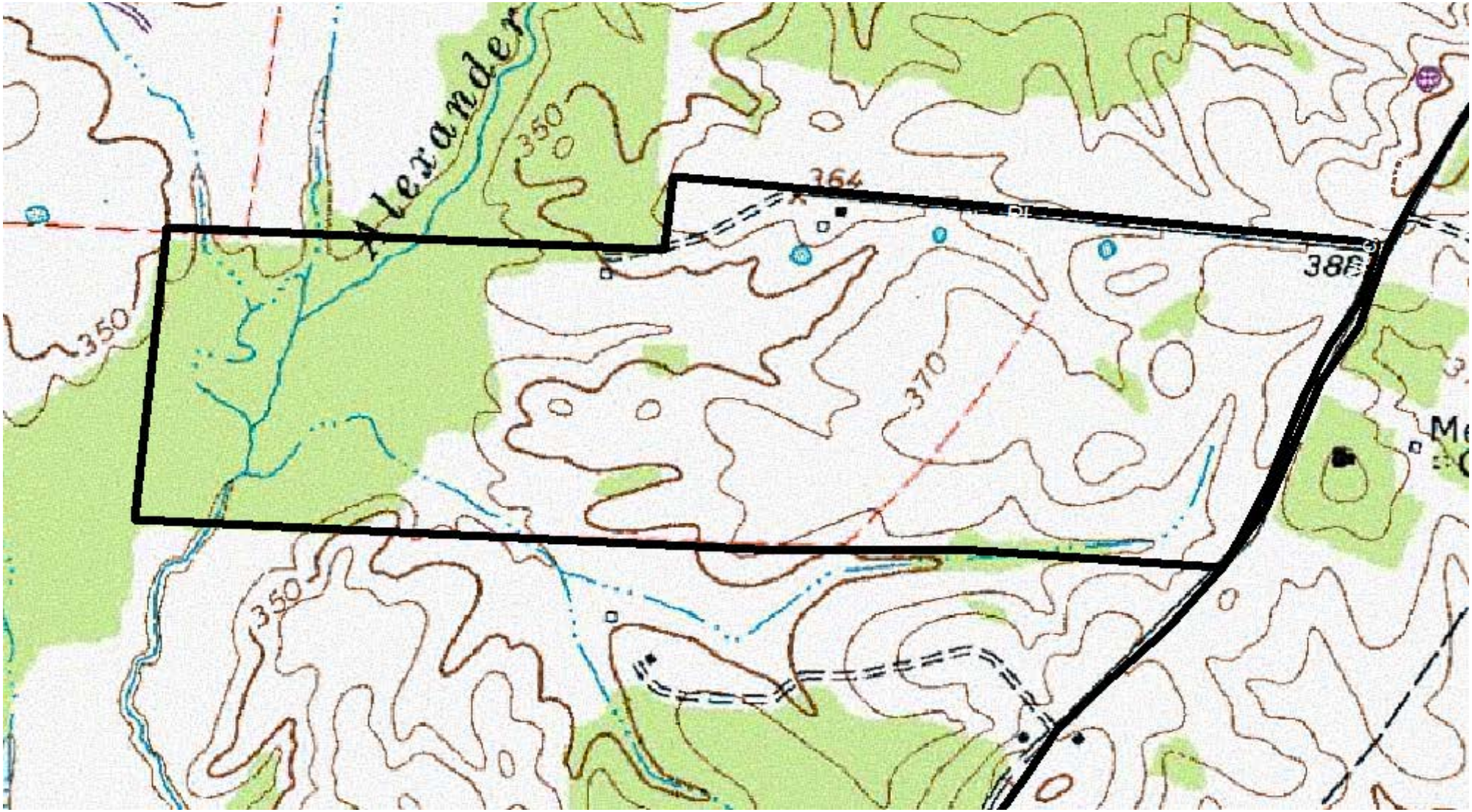
N

0 500 1000 1500 2000
Scale in Feet



Owner:	Carl Nuckolls
Operator:	Jamerson Farms
Address:	Farm - Nuckolls Road
	Macon, TN
Phone:	Jamerson - 901-485-5516

Property Line
drg_s_tn047
ortho_1-1_1n_s_tn047_2016_1

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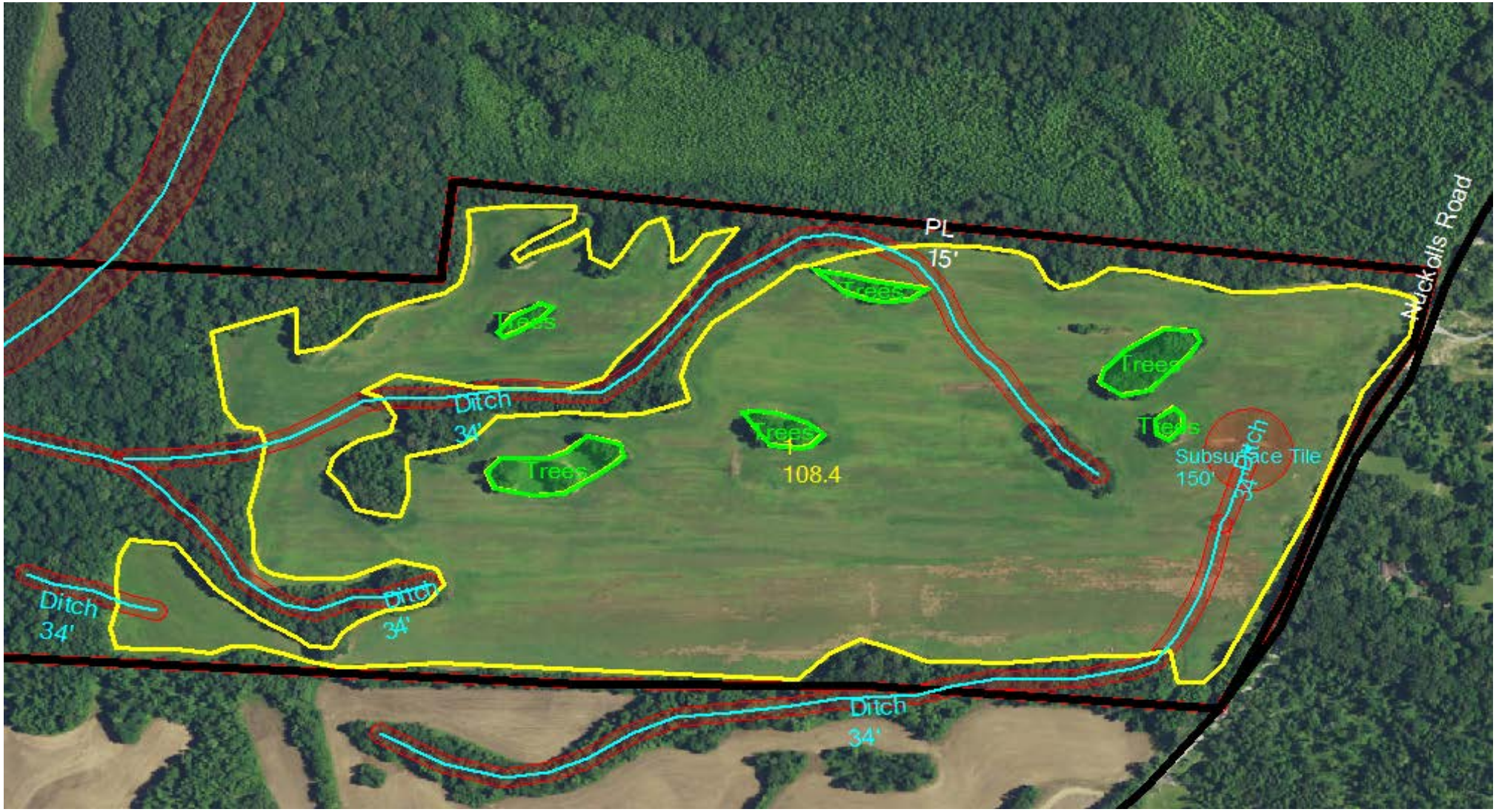
N

0 250 500 750 1000
Scale in Feet



Trees	
Creek or Ditch	
Property Line	
fields	
setbacks	
ortho_1-1_1n_s_tn047_2016_1	

Owner:	Carl Nuckolls
Operator:	Jamerson Farms
Address:	Farm - Nuckolls Road
	Macon, TN
Phone:	Jamerson - 901-485-5516