



Attachment D

Quarterly Sludge Summary Report Form

Note 1: If your site has more than one land application field, please submit a separate form for each field.

Note 2: Please place this sheet at the top of your Quarterly Sludge Report.

Note3: If you have more than one permitted site, then fill-out this form for each one of these sites.

Note4: Please send a copy of this sheet and all the attachment to the local TCEQ regional office.

For TCEQ Quarter <u>1st</u>	Reporting period from <u>9/01/13</u> , to, <u>11/30/13</u>
PERMIT NO.: <u>04585</u>	DATE: <u>5/12/09</u>
NAME OF PERMITTEE: <u>City of Lufkin</u>	
MAILING ADDRESS: <u>P.O. Box 190</u>	
<u>Lufkin, TX 75902-0190</u>	
CONTACT PERSON: Name <u>Debra Cassidy</u> Telephone No: <u>(936) 633-0288</u>	

Field No: McCurry 1,2,3 (Submit separate form for each field, if site has two or more fields)

- Class B Sewage Sludge Land Applied: 96.3578 dry tons / quarter (87.4144 MT)
 - Treated Domestic Septage – Land Applied: NA gallons / quarter
 - Method used to treat Domestic Septage: NA
 - Water treatment Plant Sludge – Land Applied: NA dry tons / quarter
 - Class A sludge land applied NA dry tons / quarter
- a. Acreage used for Sludge Application/disposal at this site:- 150 acres
- b. Site Vegetation (such as grass type etc) and # of cuttings:- Wheat and Coastal Bermuda 2 cuttings/year & grazing
- c. Does any of the sludge you have generated or received DOES NOT MEET concentration limits for any of the metals listed in Table 3 of "30 TAC §312.43 (b)"? Yes No X
- d. Site location: Latitude: N 70°W & S. 40°E , Longitude: N. 13°30'E
- e. Site physical address: Approximately 1.25 miles east of the intersection of State HWY 287 and Farm Road 325, approximately 2.25 miles east of the City of Lufkin in Angelina County, TX.

Please attach the information regarding the following items(Sewage Sludge only):-

* Please note the following information shall be provided in computer generated report format:

* Please place check mark before each item below to indicate you have attached that item with this report.

- X 1. Metal concentration, pathogen analysis data and vector attraction certifications of sludge for each source.
- X 2. Provide a list containing the name and permit number of each source of sludge.
- X 3. Date of delivery of each load of sludge land applied.
- X 4. Date of land application of each load of sludge.
- X 5. The cumulative metal loading rates for any metals as listed in Table 2 of 30 TAC §312.43(b)?"
- X 6. The suggested agronomic rate for the class B sludge.

PLEASE MAIL THE COMPLETED REPORT TO :

Texas Commission on Environmental Quality
Municipal Permits Team (MC 148)
Wastewater Permitting Section
P.O. Box 13087
Austin, TX 78711.3087



Quarterly Sludge Summary Report Form

Note 1: If your site has more than one land application field, please submit a separate form for each field.

Note 2: Please place this sheet at the top of your Quarterly Sludge Report.

Note 3: If you have more than one permitted site, then fill-out this form for each one of these sites.

Note 4: Please send a copy of this sheet and all the attachment to the local TCEQ regional office.

For TCEQ Quarter <u>1st</u> Reporting period from <u>9/01/13</u> , to, <u>11/30/13</u>
PERMIT NO.: <u>04585</u> DATE: <u>5/12/09</u>
NAME OF PERMITTEE: <u>City of Lufkin</u>
MAILING ADDRESS: <u>P.O. Box 190</u> <u>Lufkin, TX 75902-0190</u>
CONTACT PERSON: Name <u>Debra Cassidy</u> Telephone No: <u>(936) 633-0288</u>

Field No: 1 (Submit separate form for each field, if site has two or more fields)

- Class B Sewage Sludge Land Applied: 24.6611 dry tons / quarter (22.3722 MT)
 - Treated Domestic Septage – Land Applied: NA gallons / quarter
 - Method used to treat Domestic Septage: NA
 - Water treatment Plant Sludge – Land Applied: NA dry tons / quarter
 - Class A sludge land applied: NA dry tons / quarter
- a. Acreage used for Sludge Application/disposal at this site:- 50.5 acres
- b. Site Vegetation (such as grass type etc) and # of cuttings:- Wheat and Coastal Bermuda 2 cuttings/year & grazing
- c. Does any of the sludge you have generated or received DOES NOT MEET concentration limits for any of the metals listed in Table 3 of “30 TAC §312.43 (b)? Yes No X
- d. Site location: Latitude: N 70°W & S. 40°E , Longitude: N. 13°30’E
- e. Site physical address: Approximately 1.25 miles east of the intersection of State HWY 287 and Farm Road 325, approximately 2.25 miles east of the City of Lufkin in Angelina County, TX.

Please attach the information regarding the following items(Sewage Sludge only):-

* Please note the following information shall be provided in computer generated report format:

* Please place check mark before each item below to indicate you have attached that item with this report.

- X 1. Metal concentration, pathogen analysis data and vector attraction certifications of sludge for each source.
- X 2. Provide a list containing the name and permit number of each source of sludge.
- X 3. Date of delivery of each load of sludge land applied.
- X 4. Date of land application of each load of sludge.
- X 5. The cumulative metal loading rates for any metals as listed in Table 2 of 30 TAC §312.43(b)”?
- X 6. The suggested agronomic rate for the class B sludge.

PLEASE MAIL THE COMPLETED REPORT TO :

Texas Commission on Environmental Quality
Municipal Permits Team (MC 148)
Wastewater Permitting Section
P.O. Box 13087
Austin, TX 78711.3087



Quarterly Sludge Summary Report Form

Note 1: If your site has more than one land application field, please submit a separate form for each field.

Note 2: Please place this sheet at the top of your Quarterly Sludge Report.

Note 3: If you have more than one permitted site, then fill-out this form for each one of these sites.

Note 4: Please send a copy of this sheet and all the attachment to the local TCEQ regional office.

For TCEQ Quarter 1st Reporting period from 9/01/13 , to, 11/30/13

PERMIT NO.: 04585 **DATE:** 5/12/09

NAME OF PERMITTEE: City of Lufkin

MAILING ADDRESS: P.O. Box 190
Lufkin, TX 75902-0190

CONTACT PERSON: Name Debra Cassidy Telephone No: (936) 633-0288

Field No: 2 (Submit separate form for each field, if site has two or more fields)

- Class B Sewage Sludge Land Applied: 71.6967 dry tons / quarter (65.0422 MT)
 - Treated Domestic Septage – Land Applied: NA gallons / quarter
 - Method used to treat Domestic Septage: NA
 - Water treatment Plant Sludge – Land Applied: NA dry tons / quarter
 - Class A sludge land applied NA dry tons / quarter
- a. Acreage used for Sludge Application/disposal at this site:- 67.5 acres
- b. Site Vegetation (such as grass type etc) and # of cuttings:- Wheat and Coastal Bermuda 2 cuttings/year & grazing
- c. Does any of the sludge you have generated or received DOES NOT MEET concentration limits for any of the metals listed in Table 3 of “30 TAC §312.43 (b)? Yes No X
- d. Site location: Latitude: N 70°W & S. 40°E , Longitude: N. 13°30'E
- e. Site physical address: Approximately 1.25 miles east of the intersection of State HWY 287 and Farm Road 325, approximately 2.25 miles east of the City of Lufkin in Angelina County, TX.

Please attach the information regarding the following items(Sewage Sludge only):-

* Please note the following information shall be provided in computer generated report format:

* Please place check mark before each item below to indicate you have attached that item with this report.

- X 1. Metal concentration, pathogen analysis data and vector attraction certifications of sludge for each source.
- X 2. Provide a list containing the name and permit number of each source of sludge.
- X 3. Date of delivery of each load of sludge land applied.
- X 4. Date of land application of each load of sludge.
- X 5. The cumulative metal loading rates for any metals as listed in Table 2 of 30 TAC §312.43(b)”?
- X 6. The suggested agronomic rate for the class B sludge.

PLEASE MAIL THE COMPLETED REPORT TO :

Texas Commission on Environmental Quality
 Municipal Permits Team (MC 148)
 Wastewater Permitting Section
 P.O. Box 13087
 Austin, TX 78711.3087



Quarterly Sludge Summary Report Form

Note 1: If your site has more than one land application field, please submit a separate form for each field.

Note 2: Please place this sheet at the top of your Quarterly Sludge Report.

Note 3: If you have more than one permitted site, then fill-out this form for each one of these sites.

Note 4: Please send a copy of this sheet and all the attachment to the local TCEQ regional office.

For TCEQ Quarter	<u>1st</u>	Reporting period from	<u>9/01/13</u>	, to,	<u>11/30/13</u>
PERMIT NO.:	<u>04585</u>	DATE:	<u>5/12/09</u>		
NAME OF PERMITTEE:	<u>City of Lufkin</u>				
MAILING ADDRESS:	<u>P.O. Box 190</u>				
	<u>Lufkin, TX 75902-0190</u>				
CONTACT PERSON: Name	<u>Debra Cassidy</u>	Telephone No:	<u>(936) 633-0288</u>		

Field No: 3 (Submit separate form for each field, if site has two or more fields)

- Class B Sewage Sludge Land Applied: 0 dry tons / quarter
- Treated Domestic Septage – Land Applied: NA gallons / quarter
- Method used to treat Domestic Septage: NA
- Water treatment Plant Sludge – Land Applied: NA dry tons / quarter
- Class A sludge land applied NA dry tons / quarter

- a. Acreage used for Sludge Application/disposal at this site:- 32.0 acres
- b. Site Vegetation (such as grass type etc) and # of cuttings:- Wheat and Coastal Bermuda 2 cuttings/year & grazing
- c. Does any of the sludge you have generated or received DOES NOT MEET concentration limits for any of the metals listed in Table 3 of "30 TAC §312.43 (b)"? Yes No X
- d. Site location: Latitude: N 70°W & S. 40°E, Longitude: N. 13°30'E
- e. Site physical address: Approximately 1.25 miles east of the intersection of State HWY 287 and Farm Road 325, approximately 2.25 miles east of the City of Lufkin in Angelina County, TX.

Please attach the information regarding the following items(Sewage Sludge only):-

* Please note the following information shall be provided in computer generated report format:

* Please place check mark before each item below to indicate you have attached that item with this report.

- X 1. Metal concentration, pathogen analysis data and vector attraction certifications of sludge for each source.
- X 2. Provide a list containing the name and permit number of each source of sludge.
- X 3. Date of delivery of each load of sludge land applied.
- X 4. Date of land application of each load of sludge.
- X 5. The cumulative metal loading rates for any metals as listed in Table 2 of 30 TAC §312.43(b)?"
- X 6. The suggested agronomic rate for the class B sludge.

PLEASE MAIL THE COMPLETED REPORT TO :

Texas Commission on Environmental Quality
Municipal Permits Team (MC 148)
Wastewater Permitting Section
P.O. Box 13087
Austin, TX 78711.3087

1st Quarter Sludge Report Summary Sheet

For 2014 Quarterly Report period from September 2013 through November 2013

Sludge Permit Number: 04585 **Date Issued:** May 12, 2009

Name of Permittee: Site Operator -City of Lufkin Hurricane Creek Wastewater
Wastewater Treatment Plant ; Permit No. WQ0010214-001.
Land Owner – Lois Ann McCurry; 2122 Paul Street, Lufkin, Texas 75901

Contact Person: Debra Cassidy – Director of Water Utility Plant Operations

Phone Number: (936) 633-0288

Mailing Address: P.O. Box 190 Lufkin, Texas 75902-0190

Sludge - Land Applied: 96.3578 Dry Tons (87.4144 Metric Tons) September 2013 – November 2013
a) Permit No. 04585: A total of 150 usable acres for the 1st Quarter of
September 01, 2013 – November 30, 2013, where 96.3578 Dry Tons (87.4144
Metric Tons) of Sludge was applied (96.3578 tons x 2000 lbs/ton =
192,715.60 lbs) at 1,284.7707 lbs/ac {See enclosed Tables I (a - c)}.
i) **Site 1 = 24.6611 Dry Tons (22.3722 Metric Tons) Sludge applied to 50.5 acres**
from September 01, 2013 through November 30, 2013.
ii) **Site 2 = 71.6967 Dry Tons (65.0422 Metric Tons) Sludge applied to 67.5 acres**
from September 01, 2013 through November 30, 2013.
iii) **Site 3 = No Sludge applied to 32.0 acres**
from September 01, 2013 through November 30, 2013.

Sludge - Disposed via Monofill: N/A

Sludge - Disposed via Landfill: Angelina County Waste Management Center (**Landfill**): TCEQ Permit No.
2105A= **93.5273 Dry Tons (84.8466 Metric Tons) disposed of in the
Landfill** from September 01, 2013 through November 30, 2013.

Paint Filter Test: 9/4/13; Pass
TCLP: 9/4/13; Pass

Treated Domestic Septage - Land Applied: N/A

Acreage used for Sludge Application / Disposal at this Site: 150 usable acres
a) Site 1 = 50.5 Acres
b) Site 2 = 67.5 Acres
c) Site 3 = 32.0 Acres

Site Vegetation (such as grass type, etc) and # of cuttings:

Common & Coastal Bermuda, Texas Giant, Wheat, and Rye Grasses ; Year round application. No rotation of crops. The Site is divided into application zones. Each zone receives approximately 8 tons of sludge per acre and is allowed to rest for a period of 14 to 30 months. Grass is harvested as hay and removed from the site before application is resumed on a rested zone. Two cutting per year for Areas 1, 2 and 3 were agreed upon. Areas 1, 2, and 3 are used for grazing. The one large permitted Site is listed as 3 areas. Area 1 is comprised of 50.5 acres, Area 2 is 67.5 acres, and Area 3 is 32.0 acres. Area 1 – 24,661.1 Dry Tons (22,372.2 Metric Tons) Sludge was Land Applied during September 2013- November 2013, 71,696.7 Dry Tons (65,042.2 Metric Tons) Sludge was applied to Area 2 during September 2013 – November 2013. Area 3 – No Sludge was Land Applied during September 2013 – November 2013.

Frequency of Monitoring / Analysis (Pathogens, Metals, PCB, TCLP):

- a) Toxicity Characteristic Leaching procedure (TCLP) - Annually
- b) PCB's – Annually
- c) Sewage Sludge Fecal Coliform - Once/Quarter required
- d) Sewage Sludge 503 Regulation Metals - Once/Quarter required

TCLP Pass / Fail Status: Passed during 2013 (Tested 9/4/13)

Please provide information regarding the following 3 items (Sewage Sludge Only):

- 1) **Does any of the sludge you have generated or received DOES NOT MEET concentration limits for any of the metals listed in Table 3 of "30 TAC 312.43 (b)" ?**
Yes _____ or NO X

- 2) **Has your site reached or exceeded 90% of the cumulative metal loading rates for any metals as listed in Table 2 of "30 TAC 312.43 (b)" ?**
Yes _____ or NO X

- 3) **Have you applied sewage sludge to a site after 90% of cumulative metal loading rates for any of the metals have been reached per in Table 2 of "30 TAC 312.43 (b)" ?**
Yes _____ or NO X

City of Lufkin
1st Quarterly Sludge Disposal Report
September 01, 2013 through November 30, 2013

Hurricane Creek Wastewater Treatment Plant
Permit No. WQ0010214-001
McCurry's Site Permit No. 04585
Page 13 – XI(B). Reporting Requirements

- 1) **Results of tests performed for pollutants found in sludge permit Table 3 (pg3) as appropriate for our land application practices.**
 - a) For analytical data, please refer to the enclosed Table III
- 2) **The frequency of monitoring listed in permit section IX & XII**
 - a) Toxicity Characteristic Leaching Procedure - annually
 - b) PCB' s – annually
 - c) Sewage Sludge Fecal Coliform - Once/Quarter required; voluntarily tested more frequently
 - d) Sewage Sludge 503 regulation Metals - Once/Quarter required
 - e) Soil Nutrients – Once per Year
 - f) Soil Metals – Once per 5 Years
- 3) **Toxicity Characteristic Leaching Procedure (TCLP) Results:**
 - a) Passed during 2013 (Tested 9/4/13)
- 4) **Identity of Hauler(s) (Land Applier/Operator) and TCEQ transporter number**
 - a) City of Lufkin – Hurricane Creek WWTP; # 21494
 - b) Sludge Permit No; 04585 (McCurry) (Sites, #1, # 2, & # 3)
 - e) Angelina County Waste Management Center (Landfill)
- 5) **Source of Sludge**
 - a) Hurricane Creek WWTP; FM 324 South, Lufkin, Texas 75902
 - b) TCEQ Permit No. WQ0010214-001 (Site Permit No. 04585)
 - c) Billing Address: P.O. Box 190, Lufkin, Texas 75901
- 6) **PCB concentration in sludge in mg/kg.**
 - a) Anaerobic sludge : < Detection Limit during 2013 (Tested 9/4/13)

7) **Date(s) of Disposal (Delivery and Land Application)**

- a) Continuous

8) **Owner of Disposal Site(s)**

Lois Ann McCurry; (The only Permitted Site in Use: Sites #1, # 2, & # 3)
2122 Paul Street
Lufkin, Texas 75901
Permit No. 04585

Location: This site is located in Angelina County, Texas, on County Road 155 approximately 1.25 miles east of the intersection of Farm-to-Market Road and State Highway Loop 287.

Angelina County Waste Management Center (ACWMC) (Landfill)
Chuck Brooks – Landfill Manager

P.O. Box 1862
Lufkin, Texas 75902-1862

TCEQ Permit # 2105A

Location: This Site is located in Angelina County, Texas, on Farm to Market Road 58, approximately 4.5 miles South of Loop 287

9) **Texas Commission on Environmental Quality Permit Number**

- a) #710263 (McC Curry) - Permit No. 04585
b) ACWMC (Landfill) – Permit No. 2105A

10) **Amount of Sludge Dry weight (lbs/ac) at each disposal site**

- a) Permit No. 04585: Total of 150 usable acres 1st Quarter of September 01, 2013 through November 30, 2013, where 96.3578 dry tons (87.4144 Metric Tons) was applied (96.3578 tons x 2000 lbs/ton = 192,715.600 lbs) at 1,284.7707 lbs/ac {See enclosed Tables I (a), I (b), & I (c)}.
- i) **Site 1 = 24.6611 Dry Tons (22.3722 Metric Tons) Sludge applied to 50.5 acres** from September 01, 2013 through November 30, 2013.
 - ii) **Site 2 = 71.6967 Dry Tons (65.0422 Metric Tons) Sludge applied to 67.5 acres** from September 01, 2013 through November 30, 2013.
 - iii) **Site 3 = No Sludge applied to 32.0 acres** from September 01, 2013 through November 30, 2013.
- b) Angelina County Waste Management Center (**Landfill**): TCEQ Permit No. 2105A = **93.5273 Dry Tons (84.8466 Metric Tons) disposed of in the Landfill** from September 01, 2013 through November 30, 2013.

11) The concentration (mg/kg) in the sludge of each pollutant listed in sludge permit Table 1 (pg 2) (defined as monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 (pg3)

- a) See enclosed Table III for monthly averages in mg/kg with the applicable Pollutant concentration criteria (mg/kg) from Table 3.

12) Level of Pathogen Reduction achieved (Class A or Class B)

- a) See enclosed Table VI

13) Alternative used as listed in permit Section VII A2.-Pathogen Control:

- a) Alternative # 1
- b) A mixture of domestic and industrial waste is passed through a bar screen channel and pumped to the pre-aeration basin. Grease is removed and the flow enters the primary clarifier. Settled sludge is pumped to a cyclone/clarifier grit and then a gravity thickener unit. This thickened sludge is pumped into the sludge holding tank.

Secondary sludge is thickened by a Belt Thickener unit. The sludge is pumped to the holding tank where it combines with the primary sludge. It is pumped from the holding tank to the Anaerobic Digesters. The secondary sludge has the largest volume in the holding tank.

The Anaerobic Digesters are maintained for 18 days at approximately 94 - 104 ° F.

14) Vector Attraction Reduction alternative used as listed in permit Section VIII A

- a) Alternative # 10
- b) The Anaerobic Digested sludge is de-watered using a Belt Press to approximately 15% solids. The dried sludge is then land applied at the approved permitted site by spreading it with a dozier and tractor and it is disked into the soil within 6 hours of application. Some sludge is also disposed of at the Angelina County Waste Management Center (Landfill)

15) 1st Quarter Sludge production in dry tons September 01, 2013 – November 30, 2013

- a) 189.885 Dry Tons (172.261 Metric Tons) of sludge produced {See enclosed Sludge Hauls & Table 1(c)}.

16) Amount of sludge land applied in Dry Tons 1st Qtr September 01, 2013 – November 30, 2013

- a) 96.3578 Dry Tons (87.4144 Metric Tons) of sludge land applied at McCurry's {See enclosed Tables I (a - b)}.
 - i) **Site 1 = 24.6611 Dry Tons (22.3722 Metric Tons) Sludge applied to 50.5 acres** from September 01, 2013 through November 30, 2013.
 - ii) **Site 2 = 71.6967 Dry Tons (65.0422 Metric Tons) Sludge Applied to 67.5 acres** from September 01, 2013 through November 30, 2013.
 - iii) **Site 3 = No Sludge applied to 32.0 acres** from September 01, 2013 through November 30, 2013.

- b) Angelina County Waste Management Center (**Landfill**): TCEQ Permit No. 2105A = **93.5273 Dry Tons (84.8466 Metric Tons) disposed of in the Landfill** from September 01, 2013 through November 30, 2013.

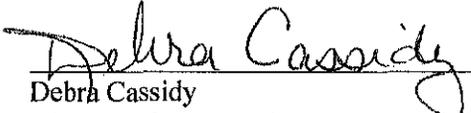
17) Sludge Management practices

- a) The site operators are instructed in the proper application procedures as listed in the 30 TAC 312.44.

18) **The required certification statements**

For Obtaining Information – Metals (30 TAC 312.47(a)(5)(B)(vi)):

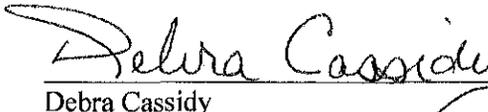
A I certify, under penalty of law, that the requirements to obtain information in 30 TAC §312.42(e) have been met for each site on which bulk sewage sludge is applied. This determination has been met under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the requirements to obtain information have been met. I am aware that there are significant penalties for false certification including fine and imprisonment.


Debra Cassidy
Director of Water Utility Plant Operations

12/11/13
Date

For Management Practices (30 TAC 312.47(a)(5)(B)(viii)):

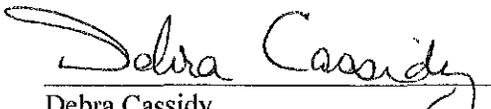
"I certify, under penalty of law, that the management practices in 30 TAC §312.44 have been met for each site on which bulk sewage sludge is applied. This determination has been met under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment.


Debra Cassidy
Director of Water Utility Plant Operations

12/11/13
Date

For Site Restrictions (30 TAC 312.47(a)(5)(B)(x)):

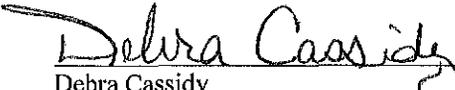
"I certify, under penalty of law, that the site restrictions in 30 TAC §312.44 have been met for each site on which bulk sewage sludge is applied. This determination has been met under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment.


Debra Cassidy
Director of Water Utility Plant Operations

12/11/13
Date

For Pathogen Reduction (30 TAC 312.47(a)(5)(B)(x)):

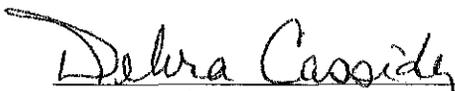
"I certify, under penalty of law, that the site restrictions in 30 TAC §312.82(b)(3) have been met. This determination has been met under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the site restrictions have been met. I am aware that there are significant penalties for false certification including fine and imprisonment.


Debra Cassidy
Director of Water Utility Plant Operations

12/11/13
Date

For Vector Attraction Reduction (30TAC 312.47(a)(5)(B)(xii))

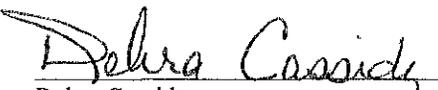
A I certify, under penalty of law, that the vector attraction reduction requirement in 312.83(b)(10) has been met. This determination has been met under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the vector attraction reduction requirement has been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment. @


Debra Cassidy
Director of Water Utility Plant Operations

12/11/13
Date

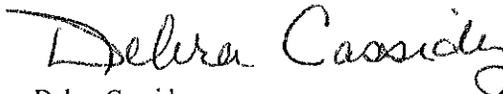
For Sludge Disposal in a Municipal Solid Waste Landfill (30 TAC Chapter 330)

I certify that the sewage sludge disposed of in the Angelina County Waste Management Center Landfill meets the requirements of 30 TAC Chapter 330 concerning the quality of sludge disposed in a municipal solid waste landfill.


Debra Cassidy
Director of Water Utility Plant Operations

12/11/13
Date

Respectfully,


Debra Cassidy
Director of Water Utility Plant Operations

TCEQ Tables For The First Quarterly Sludge Report; September 1, 2013 - November 30, 2013

TABLE I (a)

AMOUNT OF SLUDGE APPLIED TO McCURRY'S SITE FOR 9/1/13 to 11/30/13

DATE	TONS	MET.TON	KG	POUNDS	LBS/AC
Sep 2013	28.182	25.566	25566.401	56364	375.761
Oct 2013	31.238	28.338	28338.217	62475	416.500
Nov 2013	36.938	33.510	33509.811	73876	492.509
TOTAL	96.3578	87.4144	87414.4297	192715.6000	1284.7707

CALCULATIONS:

Tons Hauled x 2000 lbs/ton x 1 Metric Ton / 2204.62 lbs = Metric Tons

Metric Tons x 1000 = Kilograms of sludge applied

Tons Hauled x 2000 lbs/ ton = pounds of sludge applied

*Pounds sludge / 150 usable acres = lbs / ac sludge

Table 1 (b)

AMOUNT OF SLUDGE APPLIED TO McCURRY'S SITE # 1 September 2013 TO November 2013

DATE	TONS	MET.TON	KG	POUNDS	LBS/AC
Sep 2013	0.000	0.000	0.000	0.000	0.000
Oct 2013	0.000	0.000	0.000	0.000	0.000
Nov 2013	24.661	22.372	22372.200	49322.200	976.677
TOTAL	24.6611	22.3722	22372.2002	49322.2000	976.6772

**No Sludge Applied to McCurry's Site # 1 (50.5 acres) during the months of September 2013 to October 2013.*

AMOUNT OF SLUDGE APPLIED TO McCURRY'S SITE # 2 September 2013 TO November 2013

DATE	TONS	MET.TON	KG	POUNDS	LBS/AC
Sep 2013	28.182	25.566	25566.401	56364.200	835.025
Oct 2013	31.238	28.338	28338.217	62475.000	925.556
Nov 2013	12.277	11.138	11137.611	24554.200	363.766
TOTAL	71.6967	65.0422	65042.2295	143393.4000	2124.3467

**Sludge Applied to McCurry's Site # 2 (67.5 Acres) during months of September 2013 to November 2013*

AMOUNT OF SLUDGE APPLIED TO McCURRY'S SITE # 3 September 2013 TO November 2013

DATE	TONS	MET.TON	KG	POUNDS	LBS/AC
Sep 2013	0.000	0.000	0.000	0.000	0.000
Oct 2013	0.000	0.000	0.000	0.000	0.000
Nov 2013	0.000	0.000	0.000	0.000	0.000
TOTAL	0.0000	0.0000	0.0000	0.0000	0.0000

** No Sludge Applied to McCurry's Site # 3 (32.0 Acres) during September 2013 to November 2013*

AMOUNT OF SLUDGE APPLIED TO ANGELINA COUNTY LANDFILL September 2013 - November 2013

DATE	TONS	MET.TON	KG	POUNDS
Sep 2013	22.275	20.208	20207.655	44550.200
Oct 2013	32.395	29.388	29387.831	64789.000
Nov 2013	38.858	35.251	35251.154	77715.400
TOTAL	93.5273	84.8466	84846.6402	187054.6000

Table 1 (c)

Total Sludge Produced

DATE	TONS	MET.TON
Sep 2013	50.457	45.774
Oct 2013	63.632	57.726
Nov 2013	75.796	68.761
TOTAL	189.885	172.261

Sludge Disposal

DATE	SITE # 1		SITE # 2		SITE # 3		LANDFILL	
	TONS	MET.TON	TONS	MET.TON	TONS	MET.TON	TONS	MET.TON
Sep 2013	0.000	0.000	28.182	25.566	0.000	0.000	22.275	20.208
Oct 2013	0.000	0.000	31.238	28.338	0.000	0.000	32.395	29.388
Nov 2013	24.661	22.372	12.277	11.138	0.000	0.000	38.858	35.251
TOTAL	24.661	22.372	71.697	65.042	0.000	0.000	93.527	84.847

*No Sludge was Land Applied to McCurry's Site # 1 during the months of September 2013 and October 2013.

*Sludge was Land Applied to McCurry's Site # 2 during the 1st Qtr. of September 1, 2013 to November 30, 2013.

*No Sludge was Land Applied to McCurry's Site # 3 during the 1st Qtr. of September 1, 2013 to November 30, 2013.

TABLE II

CUMULATIVE LOADINGS PER METAL AT McCURRY'S SEPTEMBER 2013 TO NOVEMBER 2013

DATE	As mg/kg	As kg/ha	As lb/ac	Cd mg/kg	Cd kg/ha	Cd lb/ac	Cu mg/kg	Cu kg/ha	Cu lb/ac
9/4/2013	1.84	0.002650	0.002385	1.84	0.002650	0.002385	610.30	0.878836	0.790953
TOTAL	1.84	0.002650	0.002385	1.84	0.002650	0.002385	610.30	0.878836	0.790953
Max. Load Rate per 365 Day Period		2.0	1.8		1.9	1.7		75	67
Table 2 : Cumulative Load Limits		41	36		39	35		1500	1339
Table 1 Daily Max:	75			85			4300		

Calculations:

$\text{mg/kg} \times \text{MT} \times 1000 / 1000000 \times (2.471 / 150) = \text{kg/ha}$

$\text{kg/ha} \times 0.9 = \text{lb/ac}$

McCurry's = 150 usable acres

*Pressed Sludge

CUMULATIVE LOADINGS PER METAL AT McCURRY'S SEPTEMBER 2013 TO NOVEMBER 2013

DATE	Pb mg/kg	Pb kg/ha	Pb lb/ac	Hg mg/kg	Hg kg/ha	Hg lb/ac	Mo mg/kg	Mo kg/ha	Mo lb/ac
9/4/2013	48.90	0.070416	0.063375	1.463	0.002107	0.001896	8.82	0.012701	0.011431
TOTAL	48.90	0.070416	0.063375	1.463	0.002107	0.001896	8.82	0.012701	0.011431
Max. Load Rate per 365 Day Period		15	13		0.85	0.76		Report	Report
Table 2 : Cumulative Load Limits		300	268		17	15			Report
Table 1 Daily Max:	840			57			75		

CUMULATIVE LOADINGS PER METAL AT McCURRY'S SEPTEMBER 2013 TO NOVEMBER 2013

DATE	Ni mg/kg	Ni kg/ha	Ni lb/ac	Se mg/kg	Se kg/ha	Se lb/ac	Zn mg/kg	Zn kg/ha	Zn lb/ac
9/4/2013	20.96	0.030183	0.027164	6.99	0.010066	0.009059	1342.00	1.932489	1.739241
TOTAL	20.96	0.030183	0.027164	6.99	0.010066	0.009059	1342.00	1.932489	1.739241
Max. Load Rate per 365 Day Period	21	18.7		5.0	4.5		140	125	
Table 2 : Cumulative Load Limits	420	375		100	89		2800	2500	
Table 1 Daily Max:	420		100			7500			

CUMULATIVE LOADINGS PER METAL AT McCURRY'S SEPTEMBER 2013 TO NOVEMBER 2013

DATE	Cr mg/kg	Cr kg/ha	Cr lb/ac	K mg/kg	K kg/ha	K lb/ac
9/4/2013	19.90	0.028656	0.025791	1074.00	1.546568	1.391911
TOTAL	19.90	0.028656	0.025791	1074.00	1.546568	1.391911
Max. Load Rate per 365 Day Period			134			
Table 2 : Cumulative Load Limits		3000	2677			
Table 1 Daily Max:	3000					

TABLE III

Monthly Average Metal Concentrations in mg/kg Dry Weight Basis September 2013 to November 2013

DATE		As mg/kg	Cd mg/kg	Cu mg/kg	Pb mg/kg	Hg mg/kg	Mo mg/kg	Ni mg/kg
9/4/2013	<	1.84	1.84	610.30	48.90	1.463	8.82	20.96
Average	<	1.84	1.84	610.30	48.90	1.463	8.82	20.96
Table 3 Avg. Limits		41	39	1500	300	17	Report	420

Monthly Average Metal Concentrations in mg/kg Dry Weight Basis September 2013 to November 2013

DATE		Se mg/kg	Zn mg/kg	Cr mg/kg	K mg/kg
9/4/2013		6.99	1342.00	19.90	1074.00
Average		6.99	1342.00	19.90	1074.00
Table 3 Avg. Limits		36	2800	1200	

Table IV
Amount of Sludge Applied to McCurry's Site (Cumulative Pollutant Loading) (Continued)

YEAR	Mo lb/ac	Mo kg/ha	Ni lb/ac	Ni kg/ha	Se lb/ac	Se kg/ha	Zn lb/ac	Zn kg/ha	Cr lb/ac	Cr kg/ha
1991			0.450000	0.500000			12.800000	14.222000		
1992			0.810000	0.900000			14.100000	15.667000		
1993			0.638000	0.709000			11.400000	12.667000		
1994			1.937000	2.152000			13.200000	14.667000		
1995	0.076000	0.085000	0.372000	0.413000	0.013000	0.014000	13.058000	14.509000	0.203729	0.226365
1996	0.110000	0.122000	0.170000	0.189000	0.100000	0.111000	4.148000	4.609000	0.423990	0.471100
1997	0.168000	0.187000	0.183000	0.204000	1.728000	1.921000	4.132000	4.591000	0.493703	0.548559
Jan-Jun 98	0.028000	0.032000	0.010000	0.011000	0.000000	0.000000	0.535000	0.594000	0.044000	0.049000
Jul98-Jun99	0.205657	0.228507	0.277778	0.308643	0.036461	0.040512	10.740035	11.933373	0.595948	0.662165
JUL99-JUN00	0.119933	0.133259	0.176649	0.196277	0.018035	0.020039	7.989585	8.877317	0.37563	0.417367
JUL00-JUL01	0.481136	0.534595	0.741596	0.823996	0.065950	0.073278	31.176879	34.640977	1.22528	1.361424
AUG01-JUL02	1.156241	1.284712	0.620139	0.689044	0.070328	0.078143	31.436901	34.929890	1.24113	1.379037
AUG02-JUL03	0.707611	0.786235	0.488508	0.542787	0.036751	0.040835	19.95994	22.177711	0.92879	1.031984
AUG03-OCT03	0.162356	0.180396	0.102979	0.114422	0.006394	0.007104	2.955591	3.283990	0.12003	0.133364
NOV03-JAN04	0.129498	0.143886	0.146503	0.162781	0.005851	0.006501	3.737093	4.152327	0.210870	0.234300
FEB04-APR04	0.033105	0.036784	0.032835	0.036484	0.011936	0.013262	0.578743	0.643048	0.04008	0.044532
MAY04-JUL04	0.009432	0.010480	0.032387	0.035985	0.000981	0.001090	0.442039	0.491154	0.02274	0.025262
AUG04-OCT04	0.067675	0.075195	0.174424	0.093804	0.010862	0.012069	3.777410	4.197123	0.20643	0.229370
NOV04-JAN05	0.015829	0.017588	0.058120	0.064578	0.001388	0.001542	0.776833	0.863148	0.05309	0.058986
FEB05-APR05	0.013856	0.015396	0.046252	0.051391	0.001571	0.001746	0.887967	0.986630	0.03523	0.039140
MAY05-JUL05	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
AUG05-OCT05	0.067359	0.074844	0.117648	0.130720	0.006712	0.007458	2.978956	3.309951	0.0882	0.097999
NOV05-JAN06	0.050995	0.056661	0.130321	0.144801	0.004468	0.004964	2.963816	3.293129	0.12858	0.142864
FEB06-APR06	0.043038	0.047820	0.060926	0.067695	0.006341	0.007045	2.550377	2.833752	0.10875	0.120828
MAY06-JUL06	0.051692	0.057436	0.038382	0.042647	0.003869	0.004299	1.680763	1.867514	0.08961	0.099566
AUG06-OCT06	0.009340	0.010378	0.017159	0.019066	0.001059	0.001177	0.418126	0.464585	0.01825	0.020273
NOV06-JAN07	0.023331	0.025923	0.047506	0.052785	0.003652	0.004057	1.673714	1.859682	0.10465	0.116277
FEB07-APR07	0.019159	0.021288	0.073215	0.08135	0.003541	0.003934	1.247044	1.385605	0.04362	0.048468
MAY07-JUL07	0.045494	0.050549	0.56152	0.062391	0.003847	0.004275	3.444526	3.827251	0.07851	0.087232
AUG07-OCT07	0.069258	0.076954	0.099208	0.110231	0.004546	0.005051	3.291772	3.657524	0.09546	0.106071
NOV07-JAN08	0.020127	0.022363	0.064680	0.071866	0.003361	0.003734	2.440637	2.711819	0.06878	0.076426
FEB08-APR08	0.011038	0.012264	0.044009	0.048899	0.001942	0.002157	0.828401	0.920446	0.02683	0.029810
MAY08-JUL08	0.021824	0.024249	0.068966	0.076629	0.007101	0.007890	2.046289	2.273655	0.07781	0.086459
AUG08-NOV08	0.023885	0.026539	0.113517	0.126130	0.014930	0.016589	3.897166	4.330184	0.28186	0.313180
DEC08-FEB09	0.006765	0.007516	0.010026	0.011140	0.001619	0.001799	0.576207	0.640230	0.02845	0.031609
MAR09-MAY09	0.005750	0.006389	0.015189	0.016876	0.002050	0.002278	0.436129	0.484588	0.01231	0.013682
JUN09-AUG09	0.001439	0.001599	0.001872	0.002080	0.000239	0.000266	0.113639	0.126265	0.00196	0.002177
SEP09-NOV09	0.013334	0.014815	0.028894	0.032104	0.010739	0.011932	1.237189	1.374654	0.02704	0.030041
DEC09-FEB10	0.003687	0.004097	0.010138	0.011265	0.003227	0.003586	0.313390	0.348212	0.01118	0.012417
MAR10-MAY10	0.008863	0.009848	0.023368	0.025965	0.002954	0.003283	0.615148	0.683498	0.01719	0.019104
JUN10-AUG10	0.034141	0.037934	0.082568	0.091742	0.036514	0.040571	2.373179	2.636866	0.06351	0.070569
SEP10-NOV10	0.003525	0.003917	0.034520	0.038356	0.002899	0.003221	1.832190	2.035767	0.00776	0.008621
DEC10-FEB11	0.001466	0.001628	0.003968	0.004409	0.000976	0.001085	0.162984	0.181094	0.00324	0.003596
MAR11-MAY11	0.006372	0.007080	0.009558	0.010620	0.002546	0.002829	0.571299	0.634776	0.007219	0.008021
JUN11-AUG11	0.031186	0.034651	0.070220	0.078022	0.019414	0.021571	2.994681	3.327424	0.04193	0.046584
SEP11-NOV11	0.013664	0.015182	0.033139	0.036821	0.006910	0.007678	1.201475	1.334972	0.019161	0.021290
DEC11-FEB12	0.003560	0.003956	0.005195	0.005772	0.000941	0.001045	0.189445	0.210495	0.003717	0.004130
MAR12-MAY12	0.004618	0.005131	0.012211	0.013568	0.004720	0.005245	0.415081	0.461201	0.009184	0.010205
JUN12-AUG12	0.007905	0.008783	0.028107	0.031230	0.008156	0.009062	0.924759	1.02751	0.02346	0.026071
SEP12-NOV12	0.014299	0.015888	0.004127	0.004586	0.009424	0.010472	1.592406	1.769934	0.029086	0.032318
DEC12-FEB13	0.001635	0.001817	0.003826	0.004251	0.001034	0.001149	0.149496	0.166107	0.002376	0.002640
MAR13-MAY13	0.003007	0.003341	0.011480	0.012756	0.002460	0.002733	0.733929	0.815477	0.008337	0.009263
JUN13-AUG13	0.024774	0.027526	0.067165	0.074628	0.040419	0.044910	2.282037	2.535597	0.057380	0.063755
SEP13-NOV13	0.011431	0.012701	0.027164	0.030183	0.009059	0.010066	1.739241	1.932489	0.025791	0.028656
TOTAL	4.142290	4.604100	9.387962	9.769776	2.339177	2.599532	237.747507	264.164347	7.831842	8.702157
Table 2 Limits	Report	Report	375	420	89	100	2500	2800	2677	Report

Table V
September 2013 through November 2013 Sludge DMR
1st Quarter : September - November 2013: 87.4144 MT

Metal	mg/kg conc.	kg/ha mtls	lb/ac
As	< 1.84	< 0.002650	< 0.002385
Cd	1.84	0.002650	0.002385
Cr	19.90	0.028656	0.025791
Cu	610.30	0.878836	0.790953
Pb	48.90	0.070416	0.063375
Hg	1.463	0.002107	0.001896
Mo	8.82	0.012701	0.011431
Ni	20.96	0.030183	0.027164
Se	6.99	0.010066	0.009059
Zn	1342.00	1.932489	1.739241
K	1074.00	1.546568	1.391911

Calculations;

$\text{mg/kg} \times \text{MT} \times 1000 / 1000000 \times (2.471 / 150) = \text{kg/ha}$

$\text{kg/ha} \times 0.9 = \text{lb/ac}$

McCurry's = 150 usable acres

Table V (b) (Quarter # 1) Site 1

September 01, 2013 through November 30, 2013 Sludge DMR

1st Month: September 01 - 30, 2013: No Sludge Applied				2nd Month :October 01 - 31, 2013: No Sludge Applied			
Metal	mg/kg conc.	kg/ha mtls	lb/ac	Metal	mg/kg conc.	kg/ha mtls	lb/ac
As		0.000000	0.000000	As		0.000000	0.000000
Cd		0.000000	0.000000	Cd		0.000000	0.000000
Cr		0.000000	0.000000	Cr		0.000000	0.000000
Cu		0.000000	0.000000	Cu		0.000000	0.000000
Pb		0.000000	0.000000	Pb		0.000000	0.000000
Hg		0.000000	0.000000	Hg		0.000000	0.000000
Mo		0.000000	0.000000	Mo		0.000000	0.000000
Ni		0.000000	0.000000	Ni		0.000000	0.000000
Se		0.000000	0.000000	Se		0.000000	0.000000
Zn		0.000000	0.000000	Zn		0.000000	0.000000
K		0.000000	0.000000	K		0.000000	0.000000
3rd Month : November 01 - 30, 2013: 22.3722				*No Sludge was applied to Site # 1 during the months of September 2013 to October 2013			
Metal	mg/kg conc.	kg/ha mtls	lb/ac				
As	< 1.84	< 0.002014	< 0.001813				
Cd	1.84	0.002014	0.001813				
Cr	19.90	0.021784	0.019606				
Cu	610.30	0.668088	0.601279				
Pb	48.90	0.053530	0.048177				
Hg	1.463	0.001602	0.001441				
Mo	8.82	0.009655	0.008690				
Ni	20.96	0.022945	0.020650				
Se	6.99	0.007652	0.006887				
Zn	1342.00	1.469070	1.322163				
K	1074.00	1.175694	1.058125				

Quarterly Calculations;

$$\text{mg/kg} \times \text{MT} \times 1000 / 1000000 \times (2.471 / 50.5) = \text{kg/ha}$$

$$\text{kg/ha} \times 0.9 = \text{lb/ac}$$

McCurry's = Site # 1 = 50.5 usable acres

Table V (c) (Quarter # 1) Site 2

September 01, 2013 through November 30, 2013 Sludge DMR

1st Month: September 01 - 30, 2013: 25.566 MT				2nd Month: October 01-31, 2013: 28.338 MT			
Metal	mg/kg conc.	kg/ha mtls	lb/ac	Metal	mg/kg conc.	kg/ha mtls	lb/ac
As	< 1.84	< 0.001722	< 0.001550	As	< 1.84	< 0.001909	< 0.001718
Cd	1.84	0.001722	0.001550	Cd	1.84	0.001909	0.001718
Cr	19.90	0.018625	0.016762	Cr	19.90	0.020644	0.018580
Cu	610.30	0.571192	0.514073	Cu	610.30	0.633118	0.569806
Pb	48.90	0.045766	0.041190	Pb	48.90	0.050728	0.045655
Hg	1.463	0.001369	0.001232	Hg	1.463	0.001518	0.001366
Mo	8.82	0.008255	0.007429	Mo	8.82	0.009150	0.008235
Ni	20.96	0.019617	0.017655	Ni	20.96	0.021744	0.019569
Se	6.99	0.006542	0.005888	Se	6.99	0.007251	0.006526
Zn	1342.00	1.256004	1.130404	Zn	1342.00	1.392176	1.252958
K	1074.00	1.005178	0.904660	K	1074.00	1.114155	1.002740
3rd Month: November 01 - 30, 2013: 11.138 MT							
Metal	mg/kg conc.	kg/ha mtls	lb/ac	Sludge was applied to Site #2 for the first quarter September 2013 - November 2013			
As	< 1.84	< 0.000750	< 0.000675				
Cd	1.84	0.000750	0.000675				
Cr	19.90	0.008114	0.007302				
Cu	610.30	0.248831	0.223948				
Pb	48.90	0.019937	0.017944				
Hg	1.463	0.000596	0.000537				
Mo	8.82	0.003596	0.003236				
Ni	20.96	0.008546	0.007691				
Se	6.99	0.002850	0.002565				
Zn	1342.00	0.547159	0.492443				
K	1074.00	0.437890	0.394101				

Quarterly Calculations;

$$\text{mg/kg} \times \text{MT} \times 1000 / 1000000 \times (2.471 / 67.5) = \text{kg/ha}$$

$$\text{kg/ha} \times 0.9 = \text{lb/ac}$$

McCurry's = Site # 2 = 67.5 usable acres

Table V (d) (Quarter # 1) Site 3

September 01, 2013 through November 30, 2013 Sludge DMR

1st Month: September 01 - 30, 2013: No Sludge Applied				2nd Month :October 01 - 31, 2013: No Sludge Applied			
Metal	mg/kg conc.	kg/ha mtls	lb/ac	Metal	mg/kg conc.	kg/ha mtls	lb/ac
As		0.000000	0.000000	As		0.000000	0.000000
Cd		0.000000	0.000000	Cd		0.000000	0.000000
Cr		0.000000	0.000000	Cr		0.000000	0.000000
Cu		0.000000	0.000000	Cu		0.000000	0.000000
Pb		0.000000	0.000000	Pb		0.000000	0.000000
Hg		0.000000	0.000000	Hg		0.000000	0.000000
Mo		0.000000	0.000000	Mo		0.000000	0.000000
Ni		0.000000	0.000000	Ni		0.000000	0.000000
Se		0.000000	0.000000	Se		0.000000	0.000000
Zn		0.000000	0.000000	Zn		0.000000	0.000000
K		0.000000	0.000000	K		0.000000	0.000000

3rd Month: November 01 - 30,2013: No sludge Applied			
Metal	mg/kg conc.	kg/ha mtls	lb/ac
As		0.000000	0.000000
Cd		0.000000	0.000000
Cr		0.000000	0.000000
Cu		0.000000	0.000000
Pb		0.000000	0.000000
Hg		0.000000	0.000000
Mo		0.000000	0.000000
Ni		0.000000	0.000000
Se		0.000000	0.000000
Zn		0.000000	0.000000
K		0.000000	0.000000

No Sludge was applied to Site #3 for the first quarter
September 2013 - November 2013

Quarterly Calculations:

$$\text{mg/kg} \times \text{MT} \times 1000 / 1000000 \times (2.471 / 32.0) = \text{kg/ha}$$

$$\text{kg/ha} \times 0.9 = \text{lb/ac}$$

McCurry's = Site # 3 = 32.0 usable acres

Table VI**PSRP(Fecal) and % Total & % Volatile Solids for September 2013 Through November 2013**

DATE	PSRP Fecal Coliform CFU/gram	%Total Solids		%VolatileSolids	
		Anaerobic Digester	Holding Tank	Anaerobic Digester	Holding Tank
9/16/2013			1.50		76.20
9/23/2013	21,368	1.80		65.20	
10/28/2013	16,522	2.00		64.90	
11/18/2013	82,853	2.10		62.90	
Average	40248	1.97	1.50	64.33	76.20

STEP 2 - SOIL TEST ANALYSIS AND FERTILIZER RECOMMENDATIONS

Site No. 1-1

Note: Please include a fertilizer recommendation from the local County Extension Service or equivalent source for determining the nutrient needed by the specified crop(s).

Intended Crop(s): Coastal bermuda, common bermuda, wheatgrass, ryegrass, clover

Yield Goal(s): 2-Cut, 2 ton/ac/cut and moderate grazing pH: 4.4

		<u>N (lbs/Acre)</u>
A. Nutrient needed by crop for specific yield goal**	See Attachment A	<u>400</u>
B. Nutrient available in soil (lbs/acre) [= 2 x NO ₃ -N(ppm)(0-6" soil depth) + 6 x NO ₃ -N(ppm)(6-24" soil depth)] **		<u>71.76 (SM4500D)</u>
C. Nutrient amount still needed [Nutrient needed - Nutrient available] (enter this amount in Step 4 A.)		<u>328.2</u>

**Please provide the means of determining these values.

STEP 3 - CALCULATE THE PLANT AVAILABLE NITROGEN (PAN) PROVIDED BY THE SLUDGE

(Use the values for TKN, NH₄-N, and NO₃-N from Step 1.)

A. Organic Nitrogen = TKN - (NH ₄ -N) - (NO ₃ -N) =	<u>21.57</u>
(Multiply by percent values in Appendix C for PAN) x <u>20</u> % =	<u>4.31</u>
B. Ammonium Nitrogen (NH ₄ -N) x V = <u>58.92</u> x <u>1.0</u> =	<u>+ 58.92</u>
Use Volatilization factor (V) = 0.5 if sludge is left on soil surface; Use Volatilization factor (V) = 1.0 if sludge is worked into soil.	
C. Nitrate Nitrogen (NO ₃ -N) =	<u>+ 45.96</u>
D. 3A. + 3B. + 3C. = (enter this amount in Step 4B.) Total PAN =	<u>109.19</u>

STEP 4 - CALCULATE MAXIMUM SLUDGE APPLICATION RATE BASED ON CROP NITROGEN NEEDS (SAR_N)

A. Enter amount from Step 2C. Nitrogen amount still needed:	<u>328.2</u> lbs/acre/year
B. Enter amount from Step 3D. Total PAN in sludge:	<u>109.19</u> lbs/ton
C. Sludge Application Rate (SAR _N) = A ÷ B = <u>328.2</u> / <u>109.19</u> =	<u>3.00</u> (tons/acre/year)

STEP 2 - SOIL TEST ANALYSIS AND FERTILIZER RECOMMENDATIONS

Site No. 2

Note: Please include a fertilizer recommendation from the local County Extension Service or equivalent source for determining the nutrient needed by the specified crop(s).

Intended Crop(s): Coastal bermuda, common bermuda, wheatgrass, ryegrass, clover

Yield Goal(s): 2-Cut, 2 ton/ac/cut and moderate grazing pH: 4.9

	<u>N (lb/Acre)</u>
A. Nutrient needed by crop for specific yield goal**	See Attachment A <u>400</u>
B. Nutrient available in soil (lbs/acre) [= 2 x NO ₃ -N(ppm)(0-6" soil depth) + 6 x NO ₃ -N(ppm)(6-24" soil depth)] **	<u>88.74 (3M43000)</u>
C. Nutrient amount still needed [Nutrient needed - Nutrient available] (enter this amount in Step 4 A.)	<u>311.3</u>

**Please provide the means of determining these values.

STEP 3 - CALCULATE THE PLANT AVAILABLE NITROGEN (PAN) PROVIDED BY THE SLUDGE

(Use the values for TKN, NH₄-N, and NO₃-N from Step 1.)

A. Organic Nitrogen = TKN - (NH ₄ -N) - (NO ₃ -N) =	<u>21.57</u>
(Multiply by percent values in Appendix C for PAN) x <u>20</u> % =	<u>4.31</u>
B. Ammonium Nitrogen (NH ₄ -N) x V = <u>58.92</u> x 1.0 =	<u>+ 58.92</u>
Use Volatilization factor (V) = 0.5 if sludge is left on soil surface; Use Volatilization factor (V) = 1.0 if sludge is worked into soil.	
C. Nitrate Nitrogen (NO ₃ -N) =	<u>+ 45.96</u>
D. 3A. + 3B. + 3C. = (enter this amount in Step 4B.) Total PAN =	<u>109.19</u>

STEP 4 - CALCULATE MAXIMUM SLUDGE APPLICATION RATE BASED ON CROP NITROGEN NEEDS (SAR_N)

A. Enter amount from Step 2C. Nitrogen amount still needed:	<u>311.3</u> lbs/acre/year
B. Enter amount from Step 3D. Total PAN in sludge:	<u>109.19</u> lbs/ton
C. Sludge Application Rate (SAR _N) = A + B = <u>311.3 - 109.19</u> =	<u>202.11</u> tons/acre/year

STEP 2 - SOIL TEST ANALYSIS AND FERTILIZER RECOMMENDATIONS

Site No. 30

Note: Please include a fertilizer recommendation from the local County Extension Service or equivalent source for determining the nutrient needed by the specified crop(s).

Intended Crop(s): Coastal bermuda, common bermuda, wheatgrass, ryegrass, clover

Yield Goal(s): 2-Cut, 2 ton/ac/cut and moderate grazing pH: 4.6

	<u>N (lbs/Acre)</u>
A. Nutrient needed by crop for specific yield goal**	<u>See Attachment A</u> 400
B. Nutrient available in soil (lbs/acre) [= 2 x NO ₃ -N(ppm)(0-6" soil depth) + 6 x NO ₃ -N(ppm)(6-24" soil depth)] **	<u>74.46 (SM4500D)</u>
C. Nutrient amount still needed [Nutrient needed - Nutrient available] (enter this amount in Step 4 A.)	<u>325.54</u>

**Please provide the means of determining these values.

STEP 3 - CALCULATE THE PLANT AVAILABLE NITROGEN (PAN) PROVIDED BY THE SLUDGE

(Use the values for TKN, NH₄-N, and NO₃-N from Step 1.)

A. Organic Nitrogen = TKN - (NH ₄ -N) - (NO ₃ -N) =	<u>21.57</u>
(Multiply by percent values in Appendix C for PAN) x <u>20</u> % =	<u>4.31</u>
B. Ammonium Nitrogen (NH ₄ -N) x V = <u>58.92</u> x <u>1.0</u> =	<u>+ 58.92</u>
Use Volatilization factor (V) = 0.5 if sludge is left on soil surface; Use Volatilization factor (V) = 1.0 if sludge is worked into soil.	
C. Nitrate Nitrogen (NO ₃ -N) =	<u>+ 45.96</u>
D. 3A. + 3B. + 3C. = (enter this amount in Step 4B.) Total PAN =	<u>109.19</u>

STEP 4 - CALCULATE MAXIMUM SLUDGE APPLICATION RATE BASED ON CROP NITROGEN NEEDS (SAR_N)

A. Enter amount from Step 2C. Nitrogen amount still needed:	<u>325.54</u> lbs/acre/year
B. Enter amount from Step 3D. Total PAN in sludge:	<u>109.19</u> lbs/ton
C. Sludge Application Rate (SAR _N) = A + B = <u>325.54</u> + <u>109.19</u> =	<u>2.98</u> tons/acre/year

2.98

September 2013

DATE	GALS.	DRY LBS.	TONS	AVG. FILT.	SOL.LBS. RECIRC.	Total Tons	Tons ACL	Tons McCurry	LDS ACL	LDS McCurry	Site #
9/1/2013											
9/2/2013	23100	3564.099	1.782	2285	440.214	1.5619	1.5619		1		
9/3/2013	42700	7692.149	3.846	1840	655.257	3.5184	3.5184		2		
9/4/2013	44550	8025.415	4.013	2285	848.985	3.5882	3.5882		2		
9/5/2013											
9/6/2013	21000	3783.024	1.892	2730	478.132	1.6524	1.6524		1		
9/7/2013											
9/8/2013											
9/9/2013	43225	6597.086	3.299	2540	915.661	2.8407	2.8407		2		
9/10/2013	42700	6516.959	3.258	1410	502.126	3.0074		3.0074		2	2
9/11/2013	22400	3418.733	1.709	1840	343.741	1.5375		1.5375		1	2
9/12/2013	41850	6387.231	3.194	2320	809.747	2.7887		2.7887		2	2
9/13/2013											
9/14/2013											
9/15/2013											
9/16/2013	44100	6767.410	3.384	1720	632.606	3.0674	1.5337	1.5337	1	1	2
9/17/2013	44800	6874.829	3.437	1260	470.776	3.2020		3.2020		2	2
9/18/2013	50025	7676.636	3.838	1120	467.274	3.6047		3.6047		2	2
9/19/2013	27300	4189.349	2.095	2610	594.250	1.7975		1.7975		1	2
9/20/2013											
9/21/2013	22950	3521.815	1.761	1678	321.174	1.6003		1.6003		1	2
9/22/2013											
9/23/2013	42525	6525.716	3.263	3110	1102.988	2.7114		2.7114		2	2
9/24/2013	43500	6675.336	3.338	1590	576.836	3.0492		3.0492		2	2
9/25/2013	44650	6851.810	3.426	410	152.676	3.3496		3.3496		2	2
9/26/2013	43200	6629.299	3.315	1530	551.241	3.0390	3.0390		2		
9/27/2013	24300	3728.981	1.864	1660	336.419	1.6963	1.6963		1		
9/28/2013											
9/29/2013											
9/30/2013	42525	6773.977	3.387	3060	1085.255	2.8444	2.8444		2		
TOTAL	711400	112199.854	56.09993	36998	11285.36	50.4572	22.2751	28.1821	14	18	
AVG	37442	5905.255	2.9526	1947	593.966	2.6556	2.4750	2.5620			

There was no Pressing on these Dates

9/1/2013 9/5/2013 9/7/2013 9/8/2013 9/13/2013 9/14/2013 9/15/2013 9/20/2013 9/22/2013 9/28/2013
9/29/2013

McCurry's Site 1 = 0 Tons Applied

McCurry's Site 2 = 28.1821 Tons Applied

McCurry's Site 3 = 0 Tons Applied

Total Sludge Land Applied at McCurry's = 28.1821 Tons Applied

Landfilled Sludge = 22.2751 Tons

Total Sludge Disposed September 2013 = 50.4572 Tons

October 2013

DATE	GALS.	DRY LBS.	TONS	AVG. FILT.	SOL.LBS. RECIRC.	Total Tons	Tons ACL	Tons McCurry	LDS ACL	LDS McCurry	Site #
10/1/2013	40600	6467.336	3.234	1130	382.623	3.0424	3.0424		2		
10/2/2013	40600	6467.336	3.234	1410	477.432	2.9950	1.4975	1.4975	1	1	2
10/3/2013	36400	5798.302	2.899	1270	385.542	2.7064	1.3532	1.3532	1	1	2
10/4/2013	21000	3345.174	1.673	700	122.598	1.6113		1.6113		1	2
10/5/2013	21750	3464.645	1.732	1128	204.614	1.6300		1.6300		1	2
10/6/2013											
10/7/2013	40600	7009.103	3.505	2360	799.105	3.1050		3.1050		2	2
10/8/2013	37800	6525.716	3.263	1310	412.980	3.0564		3.0564		2	2
10/9/2013	42000	7250.796	3.625	1790	627.001	3.3119	3.3119		2		
10/10/2013	43750	7552.913	3.776	1590	580.151	3.4864	3.4864		2		
10/11/2013											
10/12/2013											
10/13/2013											
10/14/2013											
10/15/2013											
10/16/2013	23500	4017.795	2.009	920	180.311	1.9187	1.9187		1		
10/17/2013	59175	10117.150	5.059	1350	666.251	4.7254	4.7254		3		
10/18/2013	43200	7385.904	3.693	970	349.479	3.5182	1.7591	1.7591	1	1	2
10/19/2013	45000	7693.650	3.847	1080	405.324	3.6442		3.6442		2	2
10/20/2013											
10/21/2013	45000	6867.990	3.434	8410	3156.273	1.8559		1.8559		2	2
10/22/2013	27500	4197.105	2.099	8830	2025.161	1.0860		1.0860		1	2
10/23/2013	23100	3525.568	1.763	4525	871.759	1.3269		1.3269		1	2
10/24/2013	43000	6562.746	3.281	520	186.482	3.1881	1.5941	1.5941	1	1	2
10/25/2013	35000	5341.770	2.671	340	99.246	2.6213	1.3106	1.3106	1	1	2
10/26/2013	20700	3159.275	1.580	4525	781.187	1.1890		1.1890		1	2
10/27/2013											
10/28/2013	44575	7323.583	3.662	950	353.168	3.4852		3.4852		2	2
10/29/2013	44100	7245.542	3.623	850	312.625	3.4665	1.7332	1.7332	1	1	2
10/30/2013	44950	7385.195	3.693	1810	678.538	3.3533	3.3533		2		
10/31/2013	41325	6789.615	3.395	500	172.325	3.3086	3.3086		2		
TOTAL	864625	141494.21	70.7471045	48268	14230.175	63.6320	32.3945	31.2375	20	21	
AVG	37592	6151.922	3.0760	2099	618.703	2.7666	2.4919	1.9523			

10/6/2013 10/11/2013 10/12/2013 10/13/2013 10/14/2013 10/15/2013 10/20/2013 10/27/2013

McCurry's Site 1 = 0 Tons Applied
 McCurry's Site 2 = 31.2375 Tons Applied
 McCurry's Site 3 = 0 Tons Applied

Total Sludge Land Applied at McCurry's = 31.2375 Tons Applied

Landfilled Sludge = 32.3945 Tons

Total Sludge Disposed October 2013 = 63.6320 Tons

November 2013

DATE	GALS.	DRY LBS.	TONS	AVG. FILT.	SOL.LBS. RECIRC.	Total Tons	Tons ACL	Tons McCurry	LDS ACL	LDS McCurry	Site #
11/1/2013	50025	8219.007	4.110	710	296.218	3.9614	3.9614		2		
11/2/2013											
11/3/2013											
11/4/2013	43500	6711.615	3.356	2580	935.998	2.8878		2.8878		2	2
11/5/2013	45500	7020.195	3.510	970	368.086	3.3261	1.6630	1.6631	1	1	2
11/6/2013	37800	5832.162	2.916	1020	321.557	2.7553		2.7553		2	2
11/7/2013	67425	10403.003	5.202	820	461.106	4.9709		4.9709		3	2
11/8/2013	49280	7603.411	3.802	920	378.116	3.6126	1.8063	1.8063	1	1	1
11/9/2013	21700	3348.093	1.674	1262	228.394	1.5598		1.5598		1	1
11/10/2013											
11/11/2013	37700	5533.757	2.767	1270	399.311	2.5672		2.5672		2	1
11/12/2013	53650	7874.962	3.937	1330	595.097	3.6399		3.6399		3	1
11/13/2013	42000	6164.928	3.082	1460	511.409	2.8268		2.8268		2	1
11/14/2013	24050	3530.155	1.765	1790	359.033	1.5856		1.5856		1	1
11/15/2013	22800	3346.675	1.673	1680	319.455	1.5136	1.5136		1		
11/16/2013	49200	7221.773	3.611	1506	617.954	3.3019		3.3019		2	1
11/17/2013											
11/18/2013	43890	7686.895	3.843	1000	366.043	3.6604		3.6604		2	1
11/19/2013	46200	8091.468	4.046	940	362.190	3.8646	1.9323	1.9323	1	1	1
11/20/2013	43200	7566.048	3.783	1800	648.518	3.4588	3.4588		2		
11/21/2013	43200	7566.048	3.783	1230	443.154	3.5614	1.7807	1.7807	1	1	1
11/22/2013	22800	3993.192	1.997	1040	197.758	1.8977	1.8977		1		
11/23/2013	21450	3756.753	1.878	1202	215.029	1.7709	1.7709		1		
11/24/2013											
11/25/2013	65975	11719.931	5.860	1220	671.282	5.5243	5.5243		3		
11/26/2013	64680	11489.885	5.745	400	215.772	5.6371	5.6371		3		
11/27/2013	20250	3597.251	1.799	870	146.930	1.7252	1.7252		1		
11/28/2013	24300	4316.701	2.158	830	168.209	2.0742	2.0742		1		
11/29/2013	22275	3956.976	1.978	830	154.192	1.9014	1.9014		1		
11/30/2013	25900	4600.928	2.300	830	179.285	2.2108	2.2108		1		
TOTAL	988750	161151.81	80.575906	29510	9560.097	75.7959	38.8577	36.9382	21	24	
AVG	39550	6446.072	3.2230	1180	382.404	3.0318	2.5905	2.6384			

There was no Pressing on these Dates

11/2/2013 11/3/2013 11/10/2013 11/17/2013 11/24/2013

McCurry's Site 1 = 24.6611 Tons Applied

McCurry's Site 2 = 12.2771 Tons Applied

McCurry's Site 3 = 0 Tons Applied

Total Sludge Land Applied at McCurry's = 36.9382 Tons Applied

Landfilled Sludge = 38.8577 Tons

Total Sludge Disposed November 2013 = 75.7959 Tons

LOUIS STREET 21

HeB

fB

A+B

Stich

32.0 AC.

OLD EMMING RD

HeB

fB

Stich

67.5 AC. fB

Stich

Mix

fB

50.5 AC.

Stich

HeB

HeB

Mix

