

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.  
 Note 3: If you have more than one permitted site, then fill-out this form for each one of those sites.  
 Note 4: Please send a copy of this sheet and all attachments to the local TCEQ regional office.

For TCEQ Quarter:	<u>1st</u>	Reporting period:	From September 1, <u>2013</u>	to August 31, <u>2014</u>
Registration No:	<u>WQ 000 4445 000</u>		Date	<u>12/04/2013</u>
Name of Registrant:	<u>K-3 RESOURCES, LP</u>			
Mailing Address:	<u>PO BOX 2236, ALVIN, TX 77512</u>			
Contact Person	Name	<u>Charles E. Pehl, PhD, PG</u>		Telephone No: <u>281-585-2817</u>

Field No. (if any): \_\_\_\_\_ (Submit separate form for each field, if site has two or more fields).

Class B Sewage Sludge Land Applied: 514.27 dry tons /quarter  
 Treated Domestic Septage - Land Applied: 0.00 gallons /quarter  
 Method used to treat Domestic Septage:  
 Water Treatment Plant Sludge - Land Applied: 0.00 dry tons /quarter  
 Class A sludge land applied: 0.00 dry tons /quarter

a. Acreage used for Sludge Application/disposal at this site

b. Site Vegetation (such as grass type etc) and # of cuttings Bermuda and native pasture grass, 7 tons/AC in 4 to 6 cuttings.

c. Does any of the sludge you have generated or received NOT MEET concentration limits for any of the metals listed in Table 3 of "30 TAC §312.43 (b)"? Yes  No

d. Site location Latitude: N 29°55'02" Longitude: W 95°58'06"

e. Site physical address: SH 529, Waller Co. 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.

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

PLEASE MAIL THE COMPLETED ANNUAL REPORT TO:

Texas Commission on Environmental Quality  
 Municipal Permits Team (MC 148)  
 Wastewater Permitting Section  
 P.O. Box 13087  
 Austin, TX 78711-3087

**RECEIVED**

DEC 13 2013

**WATER QUALITY DIVISION  
 TCEQ**

**Facilities Approved  
by TCEQ for  
Land Application**

Date: 11/30/2013

Facility Name	Permit Number	Approval Date
BMI Lime Stabilization Facility	4364	3/3/2004
BMI Lime Stabilization Facility	4538	7/26/2004
Addicks	11696-002	2/4/2003
Aldine Jr High	12072-001	2/4/2003
Arcola, City of	13362-001	1/26/2006
Bacliff	10627-001	2/4/2003
Bay View, City of	10770-001	8/22/2012
Bellville, City of	10385-002	3/3/2004
BC1	12332-001	2/4/2003
BC 31	14546-001	12/2/2011
Bernard Timbers WSC	12097-001	7/26/2004
Bilma	12025-001	1/26/2006
Blue Ridge	11553-001	2/4/2003
Carby MHP	14217-001	1/12/2005
Castlewood	11883-001	2/4/2003
Chelford City	14418-001	7/24/2013
Cinco Central	13558-001	2/4/2003
Cinco South	13172-002	2/4/2003
Cinco Southwest	14343-001	12/2/2011
Copperfield	11947-001	2/4/2003
Crosby	11388-001	2/4/2003
Cy-Klein	11366-001	3/3/2004
Durkee Manor	10419-001	3/3/2004
Dynamics Products	11841-001	10/21/2005
Emerson EST	14285-001	12/10/2004
Fairgreen	11791-001	2/4/2003
Fondren (HC WCID) Road	10570-001	2/4/2003
Fort Bend 25	12003-001	4/29/2003
Fort Bend 26	12073-001	3/3/2004
Fort Bend 30	12068-001	3/08/2012
Fort Bend 37	12370-001	2/4/2003
Fort Bend 81	13051-002	2/4/2003
Fort Bend 106	12356-001	2/4/2003
Fort Bend 116	13976-001	2/4/2003
Fort Bend 142	14408-001	3/29/2007
Fry Road	11989-001	10/21/2005
Grantham	12070-002	2/4/2003
Greentrails	12289-001	2/4/2003
Harris County Detention Center (HCDC)	13561-001	11/7/2006
Harris County Juvenile Boot Camp (HCBC)	13921-001	12/10/2004
HC/FB 1	12805-001	2/4/2003
HC 8	11727-001	4/29/2013
HCFWSD 6	10184-001	3/3/2004
HC FWSD 58	11941-001	2/4/2003
HC WCID 109	11026-002	2/4/2003
HC 24	11988-001	2/4/2003
HC 26	11406-001	2/4/2003
HC 58	11941-001	3/3/2004
HC 70	11486-001	1/12/2005
HC 71	11947-001	5/15/2013
HC 82	11799-001	3/3/2004

**Facilities Approved  
by TCEQ for  
Land Application**

Facility Name	Permit Number	Approval Date
HC 89	12939-001	4/29/2003
HC WCID 92	10908-001	5/15/2013
HC 104	11925-001	9/5/2012
HC 105	11792-002	4/29/2003
HC 122	12250-001	4/26/2004
HC 130	12574-001	11/14/2013
HC 155	12726-001	2/4/2003
HC 185	12124-001	12/2/2011
HC 196	12447-001	2/4/2003
HC 200	12294-001	3/3/2004
HC 238	12802-001	2/4/2003
HC 249	13765-001	2/4/2003
HC 284	12949-001	2/4/2003
HC 345	12356-001	12/2/2011
HC 358	13290-002	5/15/2013
HC 365	13881-001	4/18/2013
HC 368	12044-001	3/3/2004
HC 374	14354-001	4/10/2013
HC 391	14327-001	12/2/2011
HC 405	14448-001	6/6/2013
HC 432	14589-001	11/14/2013
HC 408	14606-001	6/6/2013
Heather Glen	11231-001	2/4/2003
High Meadow	10812-001	2/4/2003
Hillman Schrimp	03719-001	2/4/2003
Holiday Inn Airport	14066-001	2/4/2003
Horsebend Bayou	12128-001	3/15/2011
Hunter's Glen	11618-001	2/4/2003
Inverness Forest	10783-001	2/4/2003
Katy, City of	10706-001	4/29/2003
Langham Creek	11682-001	12/13/2005
Manford Williams Elementary 8	13007-001	4/29/2003
Mayde Creek	11969-001	3/3/2004
Meadow Hill	11215-001	3/3/2004
Meadow Place	11039-001	10/15/2012
MC UD 2	11271-001	5/3/2013
MC 15	11395-001	2/4/2003
MC 24	14116-001	11/14/2013
MC 56	13760-001	12/2/2011
MC 112	14671001	3/15/2011
MC-Woodland Oaks	14166-001	5/3/2013
Missouri City	13873-001	2/4/2003
New Ulm	13655-001	2/7/2007
Northforest	10905-001	2/4/2003
Northampton	10910-001	12/10/2004
Northline	10518-001	2/4/2003
North Mission Glen	12379-001	1/15/2013
North Park	11855-001	2/4/2003
NWHC 9	14030-001	2/4/2003
NWHC 10	11912-002	2/4/2003
NWHC 15	11939-001	3/3/2004
NWHC 20	13625-001	3/3/2004

**Facilities Approved  
by TCEQ for  
Land Application**

Facility Name	Permit Number	Approval Date
NWHC 21-23	12144-001	3/3/2004
NWHC 24	13760-001	11/14/2013
NWHC 36	13573-001	12/2/2011
Oakwilde	10236-001	3/3/2004
Orange Grove	12070-004	2/4/2003
Palmer Plantation	12937-001	3/3/2004
Pearland, City of	21484-001	3/3/2004
Pecan Grove	11655-001	3/3/2005
Plantation	11971-001	1/12/2005
Plantation Crossing	14490-001	12/2/2011
Ponderosa, Joint Powers	11081-001	2/4/2003
Rayford Road	12030-001	2/4/2003
Remington	11328-001	4/29/2005
Richmond, City of	10258-003	3/15/2011
River Oaks MHP	12692-001	12/10/2004
Riverside MHP(Glen Oaks)	12296-001	11/7/2006
Rosenberg, City of	10607-003	3/20/2013
Sealy, City of	10276-001	3/15/2011
Sienna Plantation	14100-001	3/15/2011
Southern Montgomery County	11001-01	7/26/2005
SWHC 1	12641-001	2/4/2003
Spring Creek	11574-001	2/4/2003
Spring Cypress	13711-001	2/4/2003
Sugarland, City of	12833-001	4/29/2005
Tiki Island	10879-001	2/4/2003
Timbercrest	13487-001	3/3/2004
Timberlake	11267-001	3/8/2012
Timberlane	11142-002	1/26/2006
City of Tomball, North	101616-001	2/26/2013
City of Tomball, South	101616-002	2/26/2013
Varco Shaffer	3994	12/10/2004
Waller, City of	10310-001	9/13/2012
WHC 7	12140-001	12/2/2011
WHC 11	13689-001	2/4/2003
WHC 15	12233-001	12/10/2004
Westlake	11284-001	11/14/2013
West Memorial	11152-001	2/4/2003
Westmont MHP	12761-001	12/10/2004
West Park	12346-001	7/26/2004
Ann Louise Ed Complex (Alief ISD)Wilson	13609-001	2/4/2003
WHC 10 (Winchester)	10472-001	2/4/2003
Wild Peach Elementary (CBISD)	12103-001	Pending (7/25/13)
Williamsburg	11598-001	3/3/2004
Willow River Farms	13466-001	7/26/2004
Woodcreek	11933-001	2/4/2003
Woodland Oaks	11670-001	3/3/2004



# Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

**Site Type:** Land Application  
**Permit No:** WQ0004445000  
**Site Name:** Carl Miller Farms 1 RN102913431  
**Address:** Lat: 29 degrees 55' 1.94"N Long: 95 degrees 58' 5.66"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres	Land Use	Appl. Date
09/20/2013	11:00 AM	148840	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	09/20/2013
09/20/2013	09:45 AM	149794	Bellville, City of		20	30.30	5.151000	4.671957	1	55.75	Hay/Pasture	09/20/2013
09/23/2013	07:45 AM	149800	Cinco Central		20	14.80	2.516000	2.282012	1	55.75	Hay/Pasture	09/23/2013
09/24/2013	08:45 AM	148716	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	11:30 AM	148717	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	02:00 PM	148718	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	04:30 PM	148719	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	06:00 AM	148867	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	03:30 PM	148869	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	07:15 PM	148870	Langham Creek		13	14.00	1.547000	1.403129	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	08:00 AM	148872	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	09:15 AM	149636	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	01:15 PM	149637	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	04:00 PM	149638	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	08:00 PM	149639	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	05:15 AM	149862	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	06:45 AM	149863	Cinco Central		20	14.80	2.516000	2.282012	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	03:15 PM	149865	HC MUD 26		13	12.50	1.381250	1.252794	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	09:00 AM	150278	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	12:00 PM	150279	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	02:15 PM	150280	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	05:00 PM	150323	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/24/2013	05:30 PM	150341	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/24/2013
09/25/2013	08:30 AM	148720	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/25/2013
09/25/2013	11:00 AM	148881	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/25/2013
09/25/2013	01:45 PM	148882	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/25/2013
09/25/2013	04:15 PM	148883	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/25/2013
09/25/2013	08:30 AM	149640	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75	Hay/Pasture	09/25/2013
09/25/2013	07:30 AM	149763	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/25/2013
09/25/2013	10:00 AM	149764	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/25/2013
09/25/2013	12:45 PM	149765	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/25/2013
09/25/2013	03:15 PM	149766	Richmond SW (FB	6,500		0.88	0.238524	0.216341	1	55.75	Hay/Pasture	09/25/2013



# Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

**Site Type:** Land Application  
**Permit No:** WQ0004445000  
**Site Name:** Carl Miller Farms 1 RN102913431  
**Address:** Lat: 29 degrees 55' 1.94"N Long: 95 degrees 58' 5.66"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres Land Use	Appl. Date
09/25/2013	05:45 PM	149767	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	07:30 PM	149839	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	10:00 AM	149841	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	11:45 AM	149842	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	01:15 PM	149843	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	03:00 PM	149844	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	04:45 PM	149845	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	07:00 AM	149867	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	09:00 AM	149868	FB 106		13	15.70	1.734850	1.573509	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	02:30 PM	150224	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	04:30 PM	150225	West Park	6,500		1.70	0.460785	0.417932	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	10:45 AM	150247	West Park	6,500		1.70	0.460785	0.417932	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	07:30 AM	150248	West Park	6,500		1.70	0.460785	0.417932	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	02:15 PM	150249	West Park	6,500		1.70	0.460785	0.417932	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	04:00 PM	150250	West Park	6,500		1.70	0.460785	0.417932	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	08:00 AM	150289	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	09:30 AM	150290	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	11:00 AM	150291	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	12:15 PM	150292	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	02:00 PM	150293	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	03:15 PM	150294	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	05:00 PM	150295	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	07:15 AM	150324	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	09:45 AM	150325	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	12:30 PM	150326	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	03:00 PM	150327	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	05:30 PM	150328	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	09:15 AM	150342	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	10:45 AM	150343	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	12:15 PM	150344	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	02:00 PM	150345	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013
09/25/2013	04:00 PM	150346	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	09/25/2013



# Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

**Site Type:** Land Application  
**Permit No:** WQ0004445000  
**Site Name:** Carl Miller Farms 1 RN102913431  
**Address:** Lat: 29 degrees 55' 1.94"N Long: 95 degrees 58' 5.66"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres Land Use	Appl. Date
09/25/2013	07:30 PM	150366	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/25/2013
09/26/2013	07:00 AM	148874	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	10:30 AM	148875	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	06:30 PM	148877	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	09:45 AM	148884	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	12:00 PM	148885	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	02:00 PM	148886	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	04:15 PM	148887	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	08:45 AM	149768	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	10:30 AM	149769	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	12:15 PM	149770	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	02:15 PM	149771	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	04:15 PM	149772	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	07:45 AM	149840	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	08:45 AM	149846	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	10:45 AM	149847	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	12:45 PM	149848	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	02:30 PM	149849	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	04:30 PM	149850	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	07:30 AM	149870	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	09:45 AM	149871	Tomball South		20	15.70	2.669000	2.420783	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	12:45 PM	149872	HC MUD 26		13	12.50	1.381250	1.252794	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	11:00 AM	150021	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	08:20 AM	150309	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	11:25 AM	150310	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	11:20 PM	150311	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	03:52 PM	150312	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	07:00 AM	150329	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	09:45 AM	150330	Richmond SW (FB)	6,500		0.88	0.238524	0.216341	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	05:15 PM	150332	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	11:30 AM	150347	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/26/2013	01:30 PM	150348	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013



# Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

**Site Type:** Land Application  
**Permit No:** WQ0004445000  
**Site Name:** Carl Miller Farms 1 RN102913431  
**Address:** Lat: 29 degrees 55' 1.94"N Long: 95 degrees 58' 5.66"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres Land Use	Appl. Date
09/26/2013	03:30 PM	150349	Greentrails	6,500		1.10	0.298155	0.270427	1	55.75 Hay/Pasture	09/26/2013
09/27/2013	03:50 PM	148841	FB 106		13	15.70	1.734850	1.573509	1	55.75 Hay/Pasture	09/27/2013
09/27/2013	07:00 AM	148879	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	09/27/2013
09/27/2013	11:00 AM	148880	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	09/27/2013
09/27/2013	07:45 AM	149875	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	09/27/2013
09/27/2013	09:30 AM	149876	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	09/27/2013
09/28/2013	09:15 AM	148843	Langham Creek		13	14.00	1.547000	1.403129	1	55.75 Hay/Pasture	09/28/2013
09/28/2013	01:00 PM	148844	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	09/28/2013
09/28/2013	03:15 AM	149878	Tomball North		20	10.90	1.853000	1.680671	1	55.75 Hay/Pasture	09/28/2013
09/28/2013	10:30 AM	150381	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	09/28/2013
09/30/2013	03:45 PM	148894	HC MUD 401	6,500		1.00	0.271050	0.245842	1	55.75 Hay/Pasture	09/30/2013
09/30/2013	04:30 PM	149858	HC 374	6,500		0.82	0.222261	0.201591	1	55.75 Hay/Pasture	09/30/2013
09/30/2013	03:00 PM	149906	HC 374	6,500		0.82	0.222261	0.201591	1	55.75 Hay/Pasture	09/30/2013
09/30/2013	05:30 PM	149907	HC 374	6,500		0.82	0.222261	0.201591	1	55.75 Hay/Pasture	09/30/2013
10/01/2013	07:00 AM	148849	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	10/01/2013
10/01/2013	11:00 AM	148850	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/01/2013
10/01/2013	01:00 PM	149941	Brookshire WWTP	6,500		2.60	0.704730	0.639190	1	55.75 Hay/Pasture	10/01/2013
10/01/2013	02:30 PM	149942	Brookshire WWTP	6,500		2.60	0.704730	0.639190	1	55.75 Hay/Pasture	10/01/2013
10/01/2013	09:00 AM	150038	Brookshire WWTP	6,500		2.60	0.704730	0.639190	1	55.75 Hay/Pasture	10/01/2013
10/01/2013	10:15 AM	150039	Brookshire WWTP	6,500		2.60	0.704730	0.639190	1	55.75 Hay/Pasture	10/01/2013
10/01/2013	11:45 AM	150040	Brookshire WWTP	6,500		2.60	0.704730	0.639190	1	55.75 Hay/Pasture	10/01/2013
10/01/2013	06:15 PM	150149	HC 358 Fairfield		20	14.00	2.380000	2.158660	1	55.75 Hay/Pasture	10/01/2013
10/01/2013	07:15 AM	150443	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/01/2013
10/01/2013	09:30 AM	150444	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	10/01/2013
10/01/2013	11:30 AM	150445	Tomball South		20	15.70	2.669000	2.420783	1	55.75 Hay/Pasture	10/01/2013
10/01/2013	02:45 PM	150446	HC MUD 26		13	12.50	1.381250	1.252794	1	55.75 Hay/Pasture	10/01/2013
10/02/2013	06:00 AM	148853	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/02/2013
10/02/2013	02:15 PM	148855	Langham Creek		13	14.00	1.547000	1.403129	1	55.75 Hay/Pasture	10/02/2013
10/01/2013	02:00 AM	150151	HC 358 Fairfield		20	14.00	2.380000	2.158660	1	55.75 Hay/Pasture	10/02/2013
10/02/2013	05:00 AM	150152	HC 358 Fairfield		20	14.00	2.380000	2.158660	1	55.75 Hay/Pasture	10/02/2013
10/02/2013	07:00 PM	150153	HC 358 Fairfield		20	14.00	2.380000	2.158660	1	55.75 Hay/Pasture	10/02/2013
10/02/2013	05:00 AM	150447	Richmond Regional		20	12.96	2.203200	1.998302	1	55.75 Hay/Pasture	10/02/2013





# Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

**Site Type:** Land Application  
**Permit No:** WQ0004445000  
**Site Name:** Carl Miller Farms 1 RN102913431  
**Address:** Lat: 29 degrees 55' 1.94"N Long: 95 degrees 58' 5.66"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres Land Use	Appl. Date
10/02/2013	07:45 AM	150448	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/02/2013
10/03/2013	06:00 AM	148856	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	10/03/2013
10/03/2013	09:30 AM	148857	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	10/03/2013
10/03/2013	01:30 PM	148858	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/03/2013
10/03/2013	02:30 PM	150154	HC 358 Fairfield		20	14.00	2.380000	2.158660	1	55.75 Hay/Pasture	10/03/2013
10/03/2013	03:20 PM	150155	HC 358 Fairfield		20	14.00	2.380000	2.158660	1	55.75 Hay/Pasture	10/03/2013
10/03/2013	05:00 AM	150451	Richmond Regional		20	12.96	2.203200	1.998302	1	55.75 Hay/Pasture	10/03/2013
10/03/2013	06:45 AM	150452	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/03/2013
10/03/2013	09:00 AM	150453	Tomball South		20	15.70	2.669000	2.420783	1	55.75 Hay/Pasture	10/03/2013
10/03/2013	01:15 PM	150455	FB 30		13	15.30	1.690650	1.533420	1	55.75 Hay/Pasture	10/03/2013
10/04/2013	08:20 AM	150156	HC 358 Fairfield		20	14.00	2.380000	2.158660	1	55.75 Hay/Pasture	10/04/2013
10/04/2013	04:45 AM	150456	Richmond Regional		20	12.96	2.203200	1.998302	1	55.75 Hay/Pasture	10/04/2013
10/04/2013	06:45 AM	150457	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/04/2013
10/04/2013	08:30 AM	150458	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	10/04/2013
10/04/2013	10:45 AM	150459	Rosenberg (1-A)		20	16.50	2.805000	2.544135	1	55.75 Hay/Pasture	10/04/2013
10/04/2013	12:30 PM	150460	Langham Creek		13	14.00	1.547000	1.403129	1	55.75 Hay/Pasture	10/04/2013
10/04/2013	06:00 AM	151501	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	10/04/2013
10/04/2013	02:30 PM	151503	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/04/2013
10/04/2013	08:00 PM	151504	HC MUD 26		13	12.50	1.381250	1.252794	1	55.75 Hay/Pasture	10/04/2013
10/05/2013	09:00 AM	150462	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/05/2013
10/05/2013	08:00 AM	151506	Meadow Place		20	14.40	2.448000	2.220336	1	55.75 Hay/Pasture	10/05/2013
10/05/2013	12:00 PM	151507	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/05/2013
10/07/2013	05:15 PM	148908	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/07/2013
10/07/2013	04:00 PM	149937	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/07/2013
10/07/2013	05:30 PM	149938	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/07/2013
10/07/2013	06:55 PM	150157	FB MUD 34 (1 )		20	1.40	0.238000	0.215866	1	55.75 Hay/Pasture	10/07/2013
10/07/2013	06:15 PM	150395	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/07/2013
10/07/2013	05:00 PM	150414	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/07/2013
10/07/2013	05:30 PM	150440	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/07/2013
10/07/2013	08:00 AM	150464	Tomball North		20	10.90	1.853000	1.680671	1	55.75 Hay/Pasture	10/07/2013
10/08/2013	08:45 AM	148909	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	10:15 AM	148910	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013



# Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

**Site Type:** Land Application  
**Permit No:** WQ0004445000  
**Site Name:** Carl Miller Farms 1 RN102913431  
**Address:** Lat: 29 degrees 55' 1.94"N Long: 95 degrees 58' 5.66"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres Land Use	Appl. Date
10/08/2013	11:45 AM	148911	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	01:45 PM	148912	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	03:30 PM	148913	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	05:15 PM	148914	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	03:00 PM	149703	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	05:00 PM	149704	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	01:00 PM	149958	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	03:00 PM	149959	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	04:30 PM	149960	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	02:30 PM	149976	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	04:15 PM	149977	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	06:15 PM	149978	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	04:00 AM	150158	FB MUD 34 (1 )		20	1.40	0.238000	0.215866	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	10:05 AM	150159	FB MUD 34 (1 )		20	1.40	0.238000	0.215866	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	10:00 AM	150396	West Park	6,500		1.70	0.460785	0.417932	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	11:45 AM	150397	West Park	6,500		1.70	0.460785	0.417932	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	01:30 PM	150398	West Park	6,500		1.70	0.460785	0.417932	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	03:15 PM	150399	West Park	6,500		1.70	0.460785	0.417932	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	05:00 PM	150400	West Park	6,500		1.70	0.460785	0.417932	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	03:45 PM	150418	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	05:30 PM	150419	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	01:45 PM	150465	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	08:15 AM	150468	Rosenberg (1-A)		20	16.50	2.805000	2.544135	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	04:45 PM	150470	HC MUD 26		13	12.50	1.381250	1.252794	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	06:30 PM	150481	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	06:15 PM	150521	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	09:30 AM	151007	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	11:00 AM	151008	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	12:30 PM	151009	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	02:15 PM	151010	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	04:00 PM	151011	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	05:30 PM	151012	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	10/08/2013



# Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

**Site Type:** Land Application  
**Permit No:** WQ0004445000  
**Site Name:** Carl Miller Farms 1 RN102913431  
**Address:** Lat: 29 degrees 55' 1.94"N Long: 95 degrees 58' 5.66"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres Land Use	Appl. Date
10/08/2013	06:00 AM	151510	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	02:45 PM	151512	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/08/2013
10/08/2013	06:45 PM	151513	Langham Creek		13	14.00	1.547000	1.403129	1	55.75 Hay/Pasture	10/08/2013
10/09/2013	08:45 AM	150472	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/09/2013
10/09/2013	09:30 AM	150473	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	10/09/2013
10/09/2013	01:30 PM	150475	Tomball South		20	15.70	2.669000	2.420783	1	55.75 Hay/Pasture	10/09/2013
10/09/2013	07:00 AM	151515	HC WCID 92		20	15.10	2.567000	2.328269	1	55.75 Hay/Pasture	10/09/2013
10/09/2013	11:00 AM	151516	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/09/2013
10/09/2013	03:30 PM	151517	FB 106		13	15.70	1.734850	1.573509	1	55.75 Hay/Pasture	10/09/2013
10/10/2013	06:30 AM	150477	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/10/2013
10/10/2013	08:45 AM	150478	Rosenberg (1-A)		20	16.50	2.805000	2.544135	1	55.75 Hay/Pasture	10/10/2013
10/10/2013	11:15 AM	150479	Eagle Lake WWTP		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	10/10/2013
10/10/2013	10:00 AM	150604	HC 391 (Cypress	6,500		0.44	0.119262	0.108171	1	55.75 Hay/Pasture	10/10/2013
10/10/2013	12:00 PM	150605	HC 391 (Cypress	6,500		0.44	0.119262	0.108171	1	55.75 Hay/Pasture	10/10/2013
10/10/2013	10:15 AM	150641	HC 391 (Cypress	6,500		0.44	0.119262	0.108171	1	55.75 Hay/Pasture	10/10/2013
10/10/2013	05:00 AM	151519	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	10/10/2013
10/10/2013	08:30 AM	151520	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	10/10/2013
10/10/2013	12:30 PM	151521	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/10/2013
10/10/2013	05:00 PM	151522	FB 30		13	15.30	1.690650	1.533420	1	55.75 Hay/Pasture	10/10/2013
10/11/2013	06:30 AM	150563	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/11/2013
10/11/2013	09:45 AM	150564	FB 106		13	15.70	1.734850	1.573509	1	55.75 Hay/Pasture	10/11/2013
10/11/2013	06:00 AM	151523	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	10/11/2013
10/11/2013	09:45 AM	151524	Langham Creek		13	14.00	1.547000	1.403129	1	55.75 Hay/Pasture	10/11/2013
10/11/2013	02:00 PM	151526	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/11/2013
10/12/2013	09:00 AM	151528	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/12/2013
10/14/2013	06:30 PM	150496	W H C 7	6,500		1.38	0.374049	0.339262	1	55.75 Hay/Pasture	10/14/2013
10/14/2013	05:00 PM	150542	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/14/2013
10/14/2013	08:05 PM	150543	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/14/2013
10/14/2013	11:35 PM	150544	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/14/2013
10/14/2013	08:30 AM	150569	Tomball North		20	10.90	1.853000	1.680671	1	55.75 Hay/Pasture	10/14/2013
10/14/2013	03:45 PM	150616	W H C 7	6,500		1.38	0.374049	0.339262	1	55.75 Hay/Pasture	10/14/2013
10/14/2013	07:15 PM	151076	W H C 7	6,500		1.38	0.374049	0.339262	1	55.75 Hay/Pasture	10/14/2013



# Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

**Site Type:** Land Application  
**Permit No:** WQ0004445000  
**Site Name:** Carl Miller Farms 1 RN102913431  
**Address:** Lat: 29 degrees 55' 1.94"N Long: 95 degrees 58' 5.66"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres Land Use	Appl. Date
10/14/2013	06:45 PM	151116	W H C 7	6,500		1.38	0.374049	0.339262	1	55.75 Hay/Pasture	10/14/2013
10/15/2013	03:40 AM	150545	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	08:45 AM	150546	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	11:10 AM	150547	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	03:20 PM	150548	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	07:30 PM	150549	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	04:00 AM	150571	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	05:30 AM	150572	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	07:45 AM	150573	Pecan Grove		20	17.50	2.975000	2.698325	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	11:15 AM	150618	W H C 7	6,500		1.38	0.374049	0.339262	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	01:15 PM	150619	W H C 7	6,500		1.38	0.374049	0.339262	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	03:15 PM	150620	W H C 7	6,500		1.38	0.374049	0.339262	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	09:00 AM	151137	Brookshire WWTP	6,500		2.60	0.704730	0.639190	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	10:15 AM	151138	Brookshire WWTP	6,500		2.60	0.704730	0.639190	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	11:30 AM	151139	Brookshire WWTP	6,500		2.60	0.704730	0.639190	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	12:45 PM	151140	Brookshire WWTP	6,500		2.60	0.704730	0.639190	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	11:00 AM	151175	W H C 7	6,500		1.38	0.374049	0.339262	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	01:00 PM	151176	W H C 7	6,500		1.38	0.374049	0.339262	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	03:00 PM	151177	W H C 7	6,500		1.38	0.374049	0.339262	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	04:40 PM	151178	W H C 7	6,500		1.38	0.374049	0.339262	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	01:45 PM	151181	Brookshire WWTP	6,500		2.60	0.704730	0.639190	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	05:00 AM	151531	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	02:30 PM	151533	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/15/2013
10/15/2013	08:00 PM	151534	HC MUD 26		13	12.50	1.381250	1.252794	1	55.75 Hay/Pasture	10/15/2013
10/16/2013	09:10 AM	150550	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/16/2013
10/16/2013	11:35 AM	150551	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/16/2013
10/16/2013	03:55 PM	150552	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/16/2013
10/16/2013	08:55 PM	150553	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/16/2013
10/16/2013	08:30 AM	150579	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/16/2013
10/16/2013	03:30 PM	150636	HC 238	6,500		1.79	0.485180	0.440058	1	55.75 Hay/Pasture	10/16/2013
10/16/2013	12:45 PM	150661	Tomball South		20	15.70	2.669000	2.420783	1	55.75 Hay/Pasture	10/16/2013
10/16/2013	06:00 AM	151536	HC WCID 92		20	15.10	2.567000	2.328269	1	55.75 Hay/Pasture	10/16/2013



# Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

**Site Type:** Land Application  
**Permit No:** WQ0004445000  
**Site Name:** Carl Miller Farms 1 RN102913431  
**Address:** Lat: 29 degrees 55' 1.94"N Long: 95 degrees 58' 5.66"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres Land Use	Appl. Date
10/16/2013	09:30 AM	151537	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	10/16/2013
10/16/2013	01:30 PM	151538	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/16/2013
10/16/2013	06:00 PM	151539	FB 106		13	15.70	1.734850	1.573509	1	55.75 Hay/Pasture	10/16/2013
10/17/2013	10:30 AM	150555	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/17/2013
10/17/2013	03:35 PM	150556	West Memorial		20	12.00	2.040000	1.850280	1	55.75 Hay/Pasture	10/17/2013
10/17/2013	07:30 AM	150664	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/17/2013
10/17/2013	10:00 AM	150665	Rosenberg (1-A)		20	16.50	2.805000	2.544135	1	55.75 Hay/Pasture	10/17/2013
10/17/2013	07:00 AM	151540	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	10/17/2013
10/17/2013	11:00 AM	151541	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/17/2013
10/18/2013	04:15 AM	150667	Richmond Regional		20	12.96	2.203200	1.998302	1	55.75 Hay/Pasture	10/18/2013
10/18/2013	06:15 AM	150668	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/18/2013
10/18/2013	09:00 AM	150669	Tomball South		20	15.70	2.669000	2.420783	1	55.75 Hay/Pasture	10/18/2013
10/18/2013	11:15 AM	150670	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	10/18/2013
10/18/2013	01:00 PM	150671	Langham Creek		13	14.00	1.547000	1.403129	1	55.75 Hay/Pasture	10/18/2013
10/18/2013	04:00 PM	150672	HC MUD 26		13	12.50	1.381250	1.252794	1	55.75 Hay/Pasture	10/18/2013
10/18/2013	06:00 AM	151542	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	10/18/2013
10/18/2013	10:00 AM	151543	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/18/2013
10/21/2013	07:35 PM	150557	HC MUD 71		20	12.50	2.125000	1.927375	1	55.75 Hay/Pasture	10/21/2013
10/21/2013	10:00 AM	151552	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/21/2013
10/22/2013	08:20 AM	150559	HC MUD 71		20	12.50	2.125000	1.927375	1	55.75 Hay/Pasture	10/22/2013
10/22/2013	12:45 PM	150560	HC MUD 71		20	12.50	2.125000	1.927375	1	55.75 Hay/Pasture	10/22/2013
10/22/2013	06:45 AM	150676	Richmond Regional		20	12.96	2.203200	1.998302	1	55.75 Hay/Pasture	10/22/2013
10/22/2013	09:00 AM	150677	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/22/2013
10/22/2013	02:45 PM	150678	HC MUD 26		13	12.50	1.381250	1.252794	1	55.75 Hay/Pasture	10/22/2013
10/22/2013	06:20 PM	150761	HC MUD 71		20	12.50	2.125000	1.927375	1	55.75 Hay/Pasture	10/22/2013
10/22/2013	06:00 AM	151554	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	10/22/2013
10/22/2013	02:30 PM	151556	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	10/22/2013
10/22/2013	06:15 AM	151557	Langham Creek		13	14.00	1.547000	1.403129	1	55.75 Hay/Pasture	10/22/2013
10/23/2013	07:00 AM	150681	Richmond Regional		20	12.96	2.203200	1.998302	1	55.75 Hay/Pasture	10/23/2013
10/23/2013	09:15 AM	150682	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	10/23/2013
10/23/2013	02:00 PM	150684	Tomball South		20	15.70	2.669000	2.420783	1	55.75 Hay/Pasture	10/23/2013
10/23/2013	11:00 AM	150763	HC MUD 71		20	12.50	2.125000	1.927375	1	55.75 Hay/Pasture	10/23/2013



# Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

**Site Type:** Land Application  
**Permit No:** WQ0004445000  
**Site Name:** Carl Miller Farms 1 RN102913431  
**Address:** Lat: 29 degrees 55' 1.94"N Long: 95 degrees 58' 5.66"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres	Land Use	Appl. Date
10/23/2013	05:35 PM	150764	HC MUD 71		20	12.00	2.040000	1.850280	1	55.75	Hay/Pasture	10/23/2013
10/23/2013	03:00 PM	151202	Waller WWTP	6,500		0.90	0.243945	0.221258	1	55.75	Hay/Pasture	10/23/2013
10/23/2013	04:00 PM	151203	Waller WWTP	6,500		0.90	0.243945	0.221258	1	55.75	Hay/Pasture	10/23/2013
10/23/2013	05:15 PM	151204	Waller WWTP	6,500		0.90	0.243945	0.221258	1	55.75	Hay/Pasture	10/23/2013
10/23/2013	06:00 AM	151559	HC WCID 92		20	15.10	2.567000	2.328269	1	55.75	Hay/Pasture	10/23/2013
10/23/2013	02:30 PM	151570	Waller WWTP	6,500		0.90	0.243945	0.221258	1	55.75	Hay/Pasture	10/23/2013
10/23/2013	03:45 PM	151571	Waller WWTP	6,500		0.90	0.243945	0.221258	1	55.75	Hay/Pasture	10/23/2013
10/23/2013	04:45 PM	151572	Waller WWTP	6,500		0.90	0.243945	0.221258	1	55.75	Hay/Pasture	10/23/2013
10/23/2013	09:30 AM	151741	Cinco Central		20	14.80	2.516000	2.282012	1	55.75	Hay/Pasture	10/23/2013
10/23/2013	02:00 PM	151742	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	10/23/2013
10/24/2013	06:15 AM	150685	Richmond Regional		20	12.96	2.203200	1.998302	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	08:30 AM	150686	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	10:45 AM	150687	Langham Creek		13	14.00	1.547000	1.403129	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	01:30 PM	150713	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	02:00 PM	150714	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	03:00 PM	150715	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	05:15 PM	150729	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	09:00 AM	150765	HC MUD 71		20	12.00	2.040000	1.850280	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	01:30 PM	150781	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	03:30 PM	150782	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	02:30 PM	150804	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	04:30 PM	150805	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	02:45 PM	151042	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	04:45 PM	151043	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	04:00 PM	151262	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	06:00 PM	151263	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	03:00 PM	151348	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	05:15 PM	151349	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	12:45 PM	151363	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	02:45 PM	151364	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	06:00 AM	151744	Ponderosa JPA		20	12.50	2.125000	1.927375	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	10:00 AM	151745	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	10/24/2013



# Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

**Site Type:** Land Application  
**Permit No:** WQ0004445000  
**Site Name:** Carl Miller Farms 1 RN102913431  
**Address:** Lat: 29 degrees 55' 1.94"N Long: 95 degrees 58' 5.66"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres	Land Use	Appl. Date
10/24/2013	02:30 PM	151746	FB 106		13	15.70	1.734850	1.573509	1	55.75	Hay/Pasture	10/24/2013
10/24/2013	06:30 PM	151747	FB 30		13	15.30	1.690650	1.533420	1	55.75	Hay/Pasture	10/24/2013
10/25/2013	05:45 AM	150689	Richmond Regional		20	12.96	2.203200	1.998302	1	55.75	Hay/Pasture	10/25/2013
10/25/2013	08:30 AM	150690	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	10/25/2013
10/25/2013	10:45 AM	150691	Rosenberg (1-A)		20	16.50	2.805000	2.544135	1	55.75	Hay/Pasture	10/25/2013
10/25/2013	12:30 PM	150692	Cinco Central		20	14.80	2.516000	2.282012	1	55.75	Hay/Pasture	10/25/2013
10/25/2013	09:25 AM	150767	HC MUD 365		20	12.00	2.040000	1.850280	1	55.75	Hay/Pasture	10/25/2013
10/25/2013	12:25 PM	150768	HC MUD 365		20	12.00	2.040000	1.850280	1	55.75	Hay/Pasture	10/25/2013
10/25/2013	06:30 PM	150769	HC MUD 365		20	12.00	2.040000	1.850280	1	55.75	Hay/Pasture	10/25/2013
10/25/2013	09:00 AM	150806	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/25/2013
10/25/2013	08:30 AM	151044	Westlake	6,500		1.50	0.406575	0.368764	1	55.75	Hay/Pasture	10/25/2013
10/25/2013	06:00 AM	151748	Ponderosa JPA		20	12.50	2.125000	1.927375	1	55.75	Hay/Pasture	10/25/2013
10/25/2013	10:00 AM	151749	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	10/25/2013
10/26/2013	06:00 AM	150694	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	10/26/2013
10/26/2013	07:45 AM	150695	Rosenberg (1-A)		20	16.50	2.805000	2.544135	1	55.75	Hay/Pasture	10/26/2013
10/26/2013	10:00 AM	151752	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	10/26/2013
10/26/2013	09:30 AM	151753	Langham Creek		13	14.00	1.547000	1.403129	1	55.75	Hay/Pasture	10/26/2013
10/26/2013	02:00 PM	151754	FB 30		20	15.30	2.601000	2.359107	1	55.75	Hay/Pasture	10/26/2013
10/28/2013	03:15 PM	150697	FB 30		13	15.30	1.690650	1.533420	1	55.75	Hay/Pasture	10/28/2013
10/28/2013	01:45 PM	150770	HC MUD 8		20	12.00	2.040000	1.850280	1	55.75	Hay/Pasture	10/28/2013
10/28/2013	08:00 PM	150904	HC MUD 8		20	12.00	2.040000	1.850280	1	55.75	Hay/Pasture	10/28/2013
10/29/2013	04:30 AM	150698	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	10/29/2013
10/29/2013	06:30 AM	150699	Rosenberg (1-A)		20	16.50	2.805000	2.544135	1	55.75	Hay/Pasture	10/29/2013
10/29/2013	05:00 AM	150905	HC MUD 8		20	12.00	2.040000	1.850280	1	55.75	Hay/Pasture	10/29/2013
10/29/2013	03:00 AM	151120	HC MUD 8		20	12.00	2.040000	1.850280	1	55.75	Hay/Pasture	10/29/2013
10/29/2013	03:30 PM	151381	HC MUD 26		13	12.50	1.381250	1.252794	1	55.75	Hay/Pasture	10/29/2013
10/29/2013	06:00 AM	151755	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75	Hay/Pasture	10/29/2013
10/29/2013	10:00 AM	151756	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	10/29/2013
10/29/2013	07:00 PM	151758	Cinco Central		20	14.80	2.516000	2.282012	1	55.75	Hay/Pasture	10/29/2013
10/30/2013	04:15 AM	151383	Tomball South		20	15.70	2.669000	2.420783	1	55.75	Hay/Pasture	10/30/2013
10/30/2013	06:15 AM	151384	Richmond Regional		20	12.96	2.203200	1.998302	1	55.75	Hay/Pasture	10/30/2013
10/30/2013	06:00 AM	151760	Chelford City		20	14.33	2.436100	2.209543	1	55.75	Hay/Pasture	10/30/2013



# Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

**Site Type:** Land Application  
**Permit No:** WQ0004445000  
**Site Name:** Carl Miller Farms 1 RN102913431  
**Address:** Lat: 29 degrees 55' 1.94"N Long: 95 degrees 58' 5.66"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres Land Use	Appl. Date
11/07/2013	08:30 AM	148986	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	11/07/2013
11/07/2013	03:45 PM	148988	Langham Creek		13	14.00	1.547000	1.403129	1	55.75 Hay/Pasture	11/07/2013
11/07/2013	04:15 AM	151449	Richmond Regional		20	12.96	2.203200	1.998302	1	55.75 Hay/Pasture	11/07/2013
11/07/2013	06:15 AM	151450	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	11/07/2013
11/07/2013	08:00 AM	151451	Tomball South		20	15.70	2.669000	2.420783	1	55.75 Hay/Pasture	11/07/2013
11/07/2013	04:15 PM	151454	Meadow Place		20	14.40	2.448000	2.220336	1	55.75 Hay/Pasture	11/07/2013
11/07/2013	05:00 AM	148985	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	11/08/2013
11/08/2013	06:00 AM	148991	Ponderosa JPA		20	14.90	2.533000	2.297431	1	55.75 Hay/Pasture	11/08/2013
11/08/2013	03:00 AM	148993	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	11/08/2013
11/08/2013	07:00 AM	148994	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	11/08/2013
11/08/2013	04:30 AM	151455	Richmond Regional		20	12.96	2.203200	1.998302	1	55.75 Hay/Pasture	11/08/2013
11/08/2013	06:30 AM	151456	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	11/08/2013
11/09/2013	02:00 AM	148997	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	11/09/2013
11/09/2013	10:00 AM	152182	Richmond Regional		20	12.96	2.203200	1.998302	1	55.75 Hay/Pasture	11/09/2013
11/09/2013	12:15 PM	152183	Chelford City		20	14.33	2.436100	2.209543	1	55.75 Hay/Pasture	11/09/2013
11/11/2013	07:45 AM	152184	Cinco Central		20	14.80	2.516000	2.282012	1	55.75 Hay/Pasture	11/11/2013
11/14/2013	06:15 PM	151418	Williamsburg	6,500		1.60	0.433680	0.393348	1	55.75 Hay/Pasture	11/14/2013
<b>Site Total</b>				<b>1,092,000</b>	<b>3,810</b>		<b>514.266998</b>	<b>466.440198</b>			



**Cumulative Pollutants**  
November 30, 2013

<i>Pollutants</i>	Cumulative Pollutants 08/31/2013	Weighted Means	Application 9/01/13 to 11/30/2013	Cumulative to 11/30/2013	
	(kg/ha)	(mg/kg)	(kg/ha)	(kg/ha)	(lb./ac.)
<b>Arsenic</b>	6.31	5.75	0.0149	<b>6.32</b>	5.65
<b>Cadmium</b>	3.59	1.68	0.0044	<b>3.59</b>	3.21
<b>Chromium</b>	40.49	21.47	0.0557	<b>40.55</b>	36.20
<b>Copper</b>	221.99	411.49	1.0672	<b>223.06</b>	199.16
<b>Lead</b>	42.73	15.96	0.0414	<b>42.77</b>	38.19
<b>Mercury</b>	1.01	0.74	0.0019	<b>1.01</b>	0.90
<b>Molybdenum</b>	2.94	10.40	0.0270	<b>2.97</b>	2.65
<b>Nickel</b>	17.13	11.26	0.0292	<b>17.16</b>	15.32
<b>Selenium</b>	5.19	8.15	0.0211	<b>5.21</b>	4.65
<b>Zinc</b>	481.12	869.70	2.2556	<b>483.38</b>	431.59

Biosolids Application (09/01/13 to 11/30/13):

2.85 (tons/acre)



Charles E. Pehl, PhD, PG.

Compliance Director

**Appendix A**  
**Agronomic Rate Calculations**

TCEQ 04445

**Part 1: Biosolids Application Rate**

11/30/2013

Step 1- CALCULATE QUANTITY OF NUTRIENTS & METALS IN POUNDS PER TON.

Nutrients		Percent	Conversion Factor	Pounds per ton
Total Nitrogen	(TKN)	3.78	x 20 =	75.6
Ammonium Nitrogen	(NH <sub>4</sub> )	0.43	x 20 =	8.6
Nitrate Nitrogen	(NO <sub>3</sub> )	0.07	x 20 =	1.4
Total Phosphorus	(P)	0.98	x 20 =	19.6
Total Potassium	(K)	0.32	x 20 =	6.4

Pollutants (mg/kg x 0.002 = lb./ton)		mg/kg*		lb./ton
Total Arsenic	(As)	5.75	x 0.002 =	0.0115
Total Cadmium	(Cd)	1.68	x 0.002 =	0.00336
Total Chromium	(Cr)	21.47	x 0.002 =	0.04294
Total Copper	(Cu)	411.49	x 0.002 =	0.82298
Total Lead	(Pb)	15.96	x 0.002 =	0.03192
Total Mercury	(Hg)	0.74	x 0.002 =	0.00148
Total Molybdenum	(Mo)	10.4	x 0.002 =	0.0208
Total Nickel	(Ni)	11.26	x 0.002 =	0.02252
Total Selenium	(Se)	8.15	x 0.002 =	0.0163
Total Zinc	(Zn)	869.7	x 0.002 =	1.7394

\* Values from sludge tests (dry weight)

(Conversion: mg/kg x 0.0001 = %; PPM = mg/kg)

**Appendix A  
Agronomic Rate Calculations**

TCEQ 04445

**Step 2.- SOIL TEST ANALYSIS AND FERTILIZER RECOMMENDATIONS**

Note: Please include fertilizer recommendation from the local County Extension Service or equivalent source for determining the nitrogen need for the specific crop(s)

Intended Crop(s): Bermudagrass and native pasture grasses  
Winter Rye

Yield Goal(s): 7 tons/ac in 4 to 6 cuttings.

pH: 7.0

	<u>N lb/ac</u>
A. Crop nutrient need for specific yield goal**	<u>350</u>
B. Nutrients available in soil	<u>10.32</u>
= 2 x NO3-N (ppm)(0-6"soil depth)+ 6 x NO3-N(ppm)(6-24" soil depth)	
C. Nutrient amount still needed: (A -B) (enter this amount in step 4A.)	339.68

\*\* Crop nutrient need is based on 50 lb.N/ton of forage, Texas Agriculture Extension Service, Fertilizing Summer Perennial Pastures, Publication I-2210.

**Step 3 - CALCULATE THE PLANT AVAILABLE NITROGEN (PAN) PROVIDED BY THE SLUDGE.**

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

	<u>%</u>	<u>lb./ton</u>
A. Organic-N = Total N-(NH <sub>4</sub> -N+NO <sub>3</sub> -N)	<u>3.28</u>	<u>65.6</u>
B. Ammonium Nitrogen (NH <sub>4</sub> -N)	<u>0.43</u>	<u>8.6</u>
C. Nitrate Nitrogen (NO <sub>3</sub> -N)	<u>0.07</u>	<u>1.4</u>
D.Total PAN = (0.3 x 3A) + (0.5 x 3B) + 3C =	<u>1.484</u>	<u>25.38</u>

**Step 4. CALCULATE MAXIMUM SLUDGE APPLICATION RATE FROM CROP NITROGEN NEED (SARN):**

A. Enter amount from Step 2. Nitrogen amount still needed:	<u>339.68</u>	<i>lb./ac./yr</i>
B. Enter amount from Step 3D. Total PAN in sludge	<u>25.38</u>	<i>lb./ton</i>
C. Sludge application rate(SARN)	<u>13.38</u>	<i>ton/ac./yr</i>

**Appendix A**  
**Agronomic Rate Calculations**

TCEQ 04445

**Step 5 - CALCULATE MAXIMUM SLUDGE APPLICATION RATE BASED ON METALS (SARM).**

	A	B	C	D	E	F
	Cumulative Metal Limits (lb./ac.)	Max Metal Loading/yr (lb./ac./yr)	Metals in Sludge (lb./ton)	Metals Applied Annually at SARN (lb./ac./yr)	Metals Applied Annually at SARM (lb./ac./yr)	Max Sludge Loading Rate (ton/ac.)
<b>Pollutants</b>	<i>Appendix C</i>	<i>Appendix C</i>	<i>(Step 1)</i>	<i>C x SARN</i>	<i>B/C</i>	<i>A/C</i>
Arsenic	36	1.8	0.0115	0.153913318	0.153913318	3130.434783
Cadmium	35	1.7	0.00336	0.044969456	0.044969456	10416.66667
Chromium	2677	134	0.04294	0.574698944	0.574698944	62342.80391
Copper	1339	67	0.82298	11.01457236	11.01457236	1627.014022
Lead	268	13	0.03192	0.427209835	0.427209835	8395.989975
Mercury	15	0.76	0.00148	0.019807975	0.019807975	10135.13514
Molybdenum	Monitor	Monitor				
Nickel	375	18.7	0.02252	0.301402427	0.301402427	16651.86501
Selenium	89	4.5	0.0163	0.218155398	0.218155398	5460.122699
Zinc	2500	125	1.7394	23.27972388	23.27972388	1437.277222
Other						

If value in column B > D use nitrogen for biosolids application rate.

If value in column B < D use pollutant for biosolids application rate.

**Step 6. CALCULATE SITE LIFE AND MAXIMUM APPLICATION RATE BASED ON CUMULATIVE LOADING OF NITROGEN OR LIMITING METAL(S).**

A. Maximum allowable cumulative biosolids loading rate:	1437.28	<i>tons/acre</i>
B. Previous application of biosolids:	<u>4.71</u>	<i>tons/acre</i>
C. Remaining biosolids application rate to reach metal limits:	<u>1432.57</u>	<i>tons/acre</i>
D. Maximum allowable biosolids application rate:	<u>13.38</u>	<i>tons/acre/yr</i>
E. Years remaining to reach the maximum cumulative loading:	<u>107</u>	<i>years</i>