TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 13, 2019

Ms. Victoria Bohrer, Environmental Compliance
K-3 Resources, L.P.
P.O. Box 2236
Alvin, Texas 77512

Re: K-3 Resources, L.P., TPDES Permit No. WQ0005248000
(CN603843426; RN110134855)

Dear Ms. Bohrer:

Enclosed is a copy of the above referenced permit for your beneficial land use site. The permit contains several general and special conditions for the operation of the site. In addition, the operation activities of the site must be consistent with those represented in the application.

As required by the 30 Texas Administrative Code Chapter 312, you must submit copies of the results from soil sampling on an annual basis. These sample results should be filed with both the Texas Commission on Environmental Quality (TCEQ) in Austin and the appropriate TCEQ Regional Office and maintained in your records for five years. In addition, you must submit the Annual Sludge Report Summary Sheet by September 30th of each year. Please pay associated fees promptly when billed by the TCEQ each year during the term of this permit.

This permit will be in effect for five years from the date of approval or for the term stated on the permit. To renew this permit, an application for this action must be filed with the TCEQ at least 180 days prior to the expiration date.

If you have any questions, please contact Ms. Kellie Crouch of the TCEQ's Water Quality Assessment Section at (512) 239-4671, or if by correspondence include MC-150 in the letterhead address below.

Sincerely,

David W. Galindo, Director
Water Quality Division

DWG/KC/rs

cc: The Honorable Carbett "Trey" Duhon III, County Judge, Waller County Courthouse, 836 Austin Street, Suite 203, Hempstead, Texas 77445

PERMIT NO. WQ0005248000

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

This permit supersedes and replaces TCEQ Permits Nos. WQ0004446000, WQ0004447000, and WQ0004449000.

PERMIT TO LAND APPLY SEWAGE SLUDGE
under provisions of Chapter 26 of the Texas Water Code, Chapter 361 of the Texas Health and Safety Code, and Chapter 312 of the Texas Administrative Code.

I. PERMITTEE:

K-3 Resources, L.P.
P.O. Box 2236
Alvin, Texas 77512

II. AUTHORIZATION:

Beneficial Land Application of Wastewater Treatment Plant (WWTP) Sewage Sludge and Water Treatment Plant (WTP) Sludge.

III. GENERAL DESCRIPTION AND LOCATION OF SITE:

Description: The permittee is authorized to land apply WWTP sewage sludge and WTP sludge at an overall rate not to exceed 12 dry tons per acre per year on 196.2 acres located within approximately 255.1 acres at this site. *

* See Section XIV. Special Provisions, Item A.

Location: The beneficial land application site will be located approximately 1.3 miles south of the intersection of Farm-to-Market Road 362 and Farm-to-Market Road 529 North, on the west side of Farm-to-Market Road 362, in Waller County, Texas 77423 (see Attachment A).

SIC Code: 0139

Drainage Basin: The beneficial land application site is located in the drainage basin of Bessie's Creek in Segment No. 1202 of the Brazos River Basin. No discharge of pollutants into water in the state is authorized by this permit.

This permit and the authorization contained herein shall expire at midnight five years from the date of issuance listed below.

ISSUED DATE: February 4, 2019

For the Commission

IV. GENERAL REQUIREMENTS:

A. The permittee shall handle and dispose of sewage sludge (including WTP sludge) in accordance with 30 Texas Administrative Code (TAC) Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

B. An application for renewing this permit shall be submitted by the permittee at least 180 days prior to the expiration date of this permit.

C. WWTP and WTP sludge

1. In all cases, the generator or processor of sewage sludge shall provide necessary analytical information to the parties who receive the sludge, including those receiving the sewage sludge for land application, to assure compliance with these regulations.

2. The permittee shall not accept sludge that fails the Toxicity Characteristic Leaching Procedure (TCLP) test per the method specified in both 40 Code of Federal Regulations (CFR) Part 261 and 40 CFR Part 268, or another method which receives the prior approval of the Texas Commission on Environmental Quality (TCEQ) for the contaminants listed in Table 1 of 40 CFR Section 261.24.

3. Sewage sludge shall not be applied to the land if the concentration of any metal exceeds the ceiling concentration listed in Table 1 below. Additional information on the frequency of testing for metals is found in Section IX.

Table 1: Metal Ceiling Concentrations

Pollutant	Ceiling Concentration (milligrams per kilogram) *
Arsenic	75
Cadmium	85
Chromium	300
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500

* Dry weight basis

4. When the total aggregate amount of any metal in Table 2 below (in all sludge applied at the site during the entire use of this site) reaches the cumulative level listed in Table 2, only sludge with metal levels at or below those shown in Table 3 below can be applied at the site. To compute this number, the total amount of each metal in all sludge applied must be summed on a continuing basis as sludge is applied.

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Concentration (milligrams per kilogram) *
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

* Dry weight basis

5. Sludge also cannot be applied in excess of the most restrictive of the following criteria:

   a. The maximum sludge application rate (MSAR) based on crop nitrogen needs (also referred to as the agronomic rate), which is calculated based on the total amount of nitrogen in the sludge and in the soils at the application site and on the nitrogen requirements of the vegetation in the application area.

   b. The MSAR for each metal pollutant in Table 1 above, which is calculated individually for each metal based on its concentration in the sludge and in the soils in the application area.

6. All of the MSARs above must be calculated using Appendix A of the "Application for Permit for Beneficial Land Use of Sewage Sludge." These calculations must cover both sludge and septage for areas where both are applied. If sludge is received from multiple sources, the average concentration of each of the elements above must be determined using "Table 2 - Volume Weighted Average (Mean) of Nutrient and Pollutant Concentration" from the application form.

7. Anytime the permittee plans to accept WWTP or WTP sludge from any source other than those listed in the application and approved for this permit, the permittee must notify and receive authorization from the Water Quality Division (MC 150) of the TCEQ prior to receiving the new sludge. The notification must include information to demonstrate that the sludge from the proposed new source meets the requirements of this permit. The permittee must provide a certification from each source that the sludge meets the requirements for a Process to Significantly Reduce Pathogens (PSRP) or an alternative. The permittee must provide documentation that the sludge meets the limits for polychlorinated biphenyls (PCBs), vector attraction, and the metal pollutants in Table 1 above. No sludge from sources other than the ones listed in the application can be land applied prior to receiving written authorization from the TCEQ.

V. OPERATIONAL REQUIREMENTS:

The operation and maintenance of this land application site must be in accordance with 30 TAC Chapter 312 and 40 CFR Part 503 as they relate to land application for beneficial use. All applicable local and county ordinances must also be followed.

VI. REQUIRED MANAGEMENT PRACTICES:

A. Sludge applications must not cause or contribute to the harm of a threatened or endangered species of plant, fish, or wildlife or result in the destruction or adverse modification of the critical habitat of a threatened or endangered species.

B. Sludge must not be applied to land that is flooded, frozen, or snow-covered to prevent the entry of bulk sewage sludge into wetlands or other water in the state.

C. Sludge shall be land applied in a manner which complies with 30 TAC Section 312.44, Management Requirements, including maintaining the following buffer zones for each application area.

1.	Established school, institution, business or residence	750 feet
2.	Public water supply well, intake, spring, or similar source, public water treatment plant, or public water supply elevated or ground storage tank	500 feet
3.	Solution channel, sinkhole, or other conduit to groundwater	200 feet
4.	Water in the state - when sludge is not incorporated	200 feet
5.	Water in the state - when sludge is incorporated within 48 hours of application and a vegetated cover is established	33 feet
6.	Private water supply well	150 feet
7.	Public right-of-way	50 feet
8.	Property boundary	50 feet
9.	Irrigation conveyance canal	10 feet

D. Sludge must be applied to the land at an annual application rate that is equal to or less than the agronomic rate for the vegetation in the area on which the sludge is applied.

E. The seasonally high-water table, groundwater table, or depth to water-saturated soils must be at least three (3) feet below the treatment zone for soils with moderate to slow permeability (less than two inches per hour) or four (4) feet below the treatment zone for soils with rapid to moderately rapid permeability (between two and twenty inches per hour). Sludge cannot be applied to soils with permeation rates greater than twenty inches per hour.

F. Sludge must be applied by a method and under conditions that prevent runoff beyond the active application area and protect the quality of the surface water and the soils in the unsaturated zone. In addition, the following conditions must be met:

1. sludge must be applied uniformly over the surface of the land;

2. sludge must not be applied to areas where permeable surface soils are less than 2 feet thick;

3. sludge must not be applied during rainstorms or during periods in which surface soils are water-saturated;

4. sludge must not be applied to any areas having a slope in excess of 8%;

5. where runoff from the active application area is evident, the operator must cease further sludge application until the condition is corrected;

6. the site operator must prevent public health nuisances. Sludge debris must be prevented from leaving the site. Where nuisance conditions exist, the operator must eliminate the nuisance as soon as possible;

7. sludge application practices must not allow uncontrolled public access, so as to protect the public from potential health and safety hazards at the site; and

8. sludge can be applied only to the land application area shown on Attachment B. The buffer zones as listed on that map as well as the buffer zone distances listed in section VI.C. must not have any sludge applied on them.

9. sludge may not be applied on land within a designated floodway.

G. The permittee shall post a sign that is visible from a road or sidewalk that is adjacent to the premises where the land application unit is located stating that a beneficial land use application site is located on the premises.

The sign shall be posted three days prior to and 14 days after the commencement of land application of sewage sludge and shall include the operator name, telephone number, the classification of sewage sludge and the TCEQ authorization number.

In the event of reasonably unforeseen circumstances such as weather conditions or equipment failure that necessitate a change in a planned land application site, the required sign may be posted on the day on which sewage sludge land application commences. Records of any deviation of the posting requirements listed in this subsection and associated reasons shall be retained by the operator and be readily available for review by a TCEQ representative.

H. Sludge and septage must be handled by a method that is consistent with the permittee's Adverse Weather and Alternative Plan. This plan shall detail procedures to address times when the sludge and septage cannot be applied to the land application site due to adverse weather or other conditions such as wind, precipitation, field preparation delays, and access road limitations.

VII. PATHOGEN CONTROL:

A. All sewage sludge that is applied to agricultural land, a forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B pathogen requirements.

1. For sewage sludge to be classified as Class A with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(3)(A) for specific information.

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion.

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

2. For sewage sludge to be classified as Class AB with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

   Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

   The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

   At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve greater than 50% solids in the sewage sludge.

   Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC §312.82(a)(2)(B)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC §312.82(a)(2)(B)(iv-vi) for specific information.

   Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. See 30 TAC §312.82(a)(2)(C) for specific information.

3. Sewage sludge that meets the requirements of Class AB sewage sludge may be classified a Class A sewage sludge if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.

4. Three alternatives are available to demonstrate compliance with the Class B criteria for sewage sludge.

   Alternative 1 i. A minimum of seven random samples of the sewage sludge must be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected must be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 colony forming units per gram of total solids (dry weight basis).

Alternative 2 Sewage sludge that is used or disposed of must be treated in one of the PSRP described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in subparagraph v. below;

ii. An independent Texas licensed professional engineer must provide a certification to the generator of sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification must include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established EPA final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met must be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product must meet one of the PSRP, and must meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 Sewage sludge must be treated in an equivalent process that has been approved by the EPA so long as all of the following requirements are met by the generator of the sewage sludge:

i. prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in subparagraph v. below;

ii. prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other

responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements must be in accordance with established EPA final guidance;

iii. all certification records and operational records describing how the requirements of this paragraph were met must be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. the executive director will accept from the EPA a finding of equivalency to the defined PSRP; and

v. if the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product must meet one of the PSRP and must meet the certification, operation, and record keeping requirements of this paragraph.

B. In addition, the following site restrictions must be met if Class B sludge is land applied:

1. food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface must not be harvested for 14 months after the application of sewage sludge;

2. food crops with harvested parts below the surface of the land shall not be harvested for 20 months after the application of sewage sludge when the sewage sludge remains on the land surface for 4 months or longer prior to incorporation into the soil;

3. food crops with harvested parts below the surface of the land shall not be harvested for 38 months after the application of sewage sludge when the sewage sludge remains on the land surface for less than 4 months prior to incorporation into the soil;

4. food crops, feed crops, and fiber crops shall not be harvested for 30 days after the application of sewage sludge;

5. animals shall not be allowed to graze on the land for 30 days after the application of sewage sludge;

6. turf grown on land where sewage sludge is applied shall not be harvested for 1 year after the application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn;

7. public access to land with a high potential for public exposure shall be restricted for 1 year after the application of sewage sludge;

8. public access to land with a low potential for public exposure shall be restricted for 30 days after the application of sewage sludge; and

9. land application of sludge shall be in accordance with the buffer zone requirements found in

30 TAC §312.44.

C. Domestic septage applied to the site must have a pH raised to 12 or higher by alkali addition and, without the addition of more alkali, remain at 12 or higher for a period of at least 30 minutes. Records that demonstrate these conditions for each load of septage must be maintained at this site for five (5) years. If the alkali addition occurs in a transport vehicle, the records must also be maintained in the vehicle for one (1) month and at the offices of the transporter's company for five (5) years.

VIII. VECTOR ATTRACTION REDUCTION REQUIREMENTS:

A. All bulk sewage sludge that is applied to agricultural land, a forest, a public contact site, or a reclamation site shall be treated in accordance with one of the following alternatives for vector attraction reduction.

Alternative 1 The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent [30 TAC §312.83(b)(1)].

Alternative 2 If Alternative 1 cannot be met for an anaerobically digested sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. Volatile solids must be reduced by less than 17 percent to demonstrate compliance [30 TAC §312.83(b)(2)].

Alternative 3 If Alternative 1 cannot be met for an aerobically digested sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sludge with two percent solids of or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 degrees Celsius. Volatile solids must be reduced by less than 15 percent to demonstrate compliance [30 TAC §312.83(b)(3)].

Alternative 4 The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process must be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius [30 TAC §312.83(b)(4)]. This test may only be run on sludge with two percent solids or less.

Alternative 5 Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40 degrees Celsius and the average temperature of the sewage sludge shall be higher than 45 degrees Celsius [30 TAC §312.83(b)(5)].

Alternative 6 The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours [30 TAC §312.83(b)(6)]. This must be done at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials [30 TAC §312.83(b)(7)]. Unstabilized solids are defined as

organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 8 The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials [30 TAC §312.83(b)(8)]. This shall be done at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 Sewage sludge shall be injected below the surface of the land. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the sewage sludge shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process [30 TAC §312.83(b)(9)].

Alternative 10 Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land. When sewage sludge that is incorporated into the soil is Class A or Class AB with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process [30 TAC §312.83(b)(10)].

IX. MONITORING REQUIREMENTS:

The sewage sludge must be monitored according to 30 TAC §312.46(a)(1) for the ten metals in Table 1 of Section IV.C.3, pathogen reduction, and vector attraction reduction.

A. If the concentration of nitrogen or any of the metals in Table 1 in Section IV.C.3 exceeds the concentration used to calculate any of the MSARs in Section IV.C.5 and 6, the MSAR for that element must be recalculated. If the sludge comes from multiple sources, the permittee must use Table 2 in Section IV.C.4 to calculate a volume weighted average of all sludge that will be applied during the current monitoring period.

B. After the sludge has been monitored according to 30 TAC §312.46(a)(1) for a period of two years, an application may be submitted to amend this permit to reduce the frequency of monitoring.

C. The frequency of monitoring will be increased if recalculation of the agronomic rate increases the amount of sludge that can be applied to a higher threshold, as shown in 30 TAC §312.46(a)(1). The frequency of monitoring may also be increased if the TCEQ determines that the level of pollutants or pathogens in the sludge warrants such action.

D. If WWTP and WTP sludge is received at this site for land application then the permittee must ensure that the test data for TCLP and PCBs is provided from the generators.

E. All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency pursuant to 30 TAC §312.46(a)(1).

F. Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC §312.7.

G. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

X. RECORD KEEPING REQUIREMENTS:

The permittee shall fulfill record keeping requirements per 30 TAC §312.47. The documents shall be retained at the site and shall be readily available for review by a TCEQ representative.

A. Records of the following general information must be kept for all types of sludge land application permits:

1. a certification statement that all applicable requirements (specifically listed) have been met and the permittee understands that there are significant penalties for false certification, including fines and imprisonment. See 30 TAC §312.47(a)(4)(A)(ii) or (a)(5)(A)(ii), whichever is applicable;

2. the location, by street address, and specific latitude and longitude, of each site on which sewage sludge (including WTP) is applied;

3. the number of acres in each site on which bulk sludge is applied;

4. the dates, times, and quantities of sludge applied to each site;

5. the cumulative amount of each pollutant in pounds per acre listed in Table 2 of Section IV.C.4 applied to each site;

6. the total amount of sludge applied to each site in dry tons; and

7. a description of how the management practices listed in Section IV.C., and 30 TAC §312.44 are being met. If these requirements are being met, the permittee shall prepare and keep a certification statement per 30 TAC §312.47(a)(5)(B)(viii).

B. For sewage sludge with metal concentrations at or below levels in Table 3 of Section IV.C.4 that also meets the Class A or Class AB pathogen requirements in 30 TAC §312.82(a) and the vector attraction reduction requirements in 30 TAC §312.83(b)(9) or (10), the permittee shall keep a record of a description of how the vector attraction reduction requirements are met. If these requirements are being met, the permittee shall prepare and keep a certification statement per 30 TAC §312.47(a)(5)(B)(xii).

C. For sewage sludge with metal concentrations at or below levels in Table 3 of Section IV.C.4 that also meets the Class B pathogen requirements in 30 TAC §312.82(b), and the vector attraction reduction requirements in 30 TAC §312.83(b)(9) or (10), the permittee shall keep a record of:

1. a description of how site restrictions for Class B sludge in 30 TAC §312.82(b)(3) are being met. If these requirements are being met, the permittee shall prepare and keep a certification statement per 30 TAC §312.47(a)(5)(B)(x); and

2. a description of how the vector attraction reduction requirements in 30 TAC §312.83(b)(9) or (10) are being met. If these requirements are being met, the permittee shall prepare and keep a certification statement per 30 TAC §312.47(a)(5)(B)(xii).

D. For sewage sludge with metal concentrations at or below levels in Table 1 of Section IV.C.3 that

also meets the Class B pathogen requirements in 30 TAC §312.82(b), and the vector attraction reduction requirements in 30 TAC §312.83(b)(9) or (10), the permittee shall keep a record of:

1. a description of how the requirements to obtain information from the sludge generators in 30 TAC §312.42(e) are being met. If these requirements are being met, the permittee shall prepare and keep a certification statement per 30 TAC §312.47(a)(5)(B)(vi);

2. a description of how the site restrictions for Class B sludge in 30 TAC §312.82(b)(3) are being met. If these requirements are being met, the permittee shall prepare and keep a certification statement per 30 TAC §312.47(a)(5)(B)(x); and

3. a description of how the vector attraction reduction requirements in 30 TAC §312.83(b)(9) or (10) are being met. If these requirements are being met, the permittee shall prepare and keep a certification statement per 30 TAC §312.47(a)(5)(B)(xii).

XI. REPORTING REQUIREMENTS:

A. The permittee shall submit a separate annual report by September 30th of each year per 30 TAC §312.48 for each site. The annual report must include all the information required under 30 TAC §312.48 (including the items listed below) for a period covering September 1st of the previous year through August 31st of the current year. Additionally, the "Annual Sludge Summary Report Form" (Attachment C) should be filled out and submitted with the annual report. The permittee shall submit the report to the Land Application Team of the Water Quality Assessment Section (MC 150) and the TCEQ Regional Office (MC Region 12). Record retention requirements must be followed in accordance with 30 TAC §312.47. The following information must be included in the report:

1. Annual Sludge Summary Sheet (a blank form is provided as Attachment C) with the following information:

   i. permit number;

   ii. the site location (address or latitude and longitude);

   iii. operator address, contact person's name, telephone number, and fax number;

   iv. amount of sludge applied (dry metric tons) at each land application site;

   v. number of acres on which sludge and septage is land applied;

   vi. vegetation grown and number of cuttings; and

   vii. other items listed in the summary sheet.

2. If the sludge concentration for any metal listed in Table 3 of Section IV.C.4 is exceeded, the report must include the following information:

   i. date and time of each sludge application;

   ii. all certification statements required under 30 TAC §312.47(a)(5)(B);

   iii. a description of how the information from the sludge generator was obtained, per 30 TAC §312.42(e);

iv. a description of how each of the management practices in 30 TAC §312.44 were met for this site;

v. a description of how the site restrictions in 30 TAC §312.82(b)(3) were met for this site;

vi. if the vector attraction reduction requirements in 30 TAC §312.83(b)(9) or (10) were met, a description of how this was done;

vii. soil and sludge test reports, as required in Section XII of this permit; and

viii. calculations of the current agronomic sludge application rate and the life of the site based on metal loadings (Appendix A of the application, or a similar form).

3. If none of the concentrations for the metals exceed the values listed in Table 3 in Section IV.C.4:

   i. information per 30 TAC §312.47(a)(3)(B) for Class A sludge; and

   ii. information per 30 TAC §312.47(a)(4)(B) for Class B Sludge.

4. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2 in Section IV.C.4, the permittee shall provide the following additional information:

   i. date and time of each sludge application;

   ii. the information in 30 TAC §312.47(a)(5)(A) must be obtained from the sludge generator and included in the report; and

   iii. the cumulative amount in pounds per acre of each pollutant listed in Table 2 in Section IV.C.4 applied to each application field of this site through bulk sewage sludge.

5. The permittee shall submit evidence it is complying with the nutrient management plan developed by a certified nutrient management specialist in accordance with the practice standards of the Natural Resources Conservation Service of the United States Department of Agriculture.

B. The permittee shall submit a quarterly report by the 15th day of the month following each quarter during the reporting period (i.e. quarterly reports will be due December 15th, March 15th, June 15th, and September 15th). Additionally, the "Quarterly Sludge Summary Report Form" (Attachment D) should be filled out and submitted with the quarterly report. The permittee shall submit the report to the Land Application Team of the Water Quality Assessment Section (MC 150) and the TCEQ Regional Office (MC Region 12). Record retention requirements must be followed in accordance with 30 TAC §312.47. The Quarterly Sludge Summary Report Form must include the following information:

   1. the source, quality, and quantity of sludge applied to the land application unit;

   2. the location of the land application unit, either in terms of longitude and latitude or by physical address, including the county;

   3. the dates of delivery of Class B sludge;

4. the dates of application of Class B sludge;
5. the cumulative amount of metals applied to the land application unit through the application of Class B sludge;
6. crops grown at the land application unit site; and
7. the suggested agronomic application rate for the Class B sludge.

XII. SOIL SAMPLING AND ANALYSIS:

The permittee is required to notify the local TCEQ Regional Office 48 hours prior to taking annual soil samples at the permitted site. Samples will need to be taken within the same 45-day period each year, or under an approved sampling plan and analyzed within 30 days of sample collection.

The permittee must monitor the soil-sludge mixture for the site for the parameters listed below using the soil sampling requirements described in 30 TAC §312.11(d)(2) and (3). Analytical results must be provided on a dry weight basis. The Soil Sampling and Analysis plan shall be provided to the analytical laboratory prior to sample analysis.

No.	PARAMETER[7]	NOTE	FREQUENCY	SAMPLE DEPTH	
				0" - 6"	6" - 24"
1.	Nitrate Nitrogen (NO_3-N, mg/kg)	1	1 per year	X	X
2.	Ammonium Nitrogen (NH_4-N, mg/kg)	1	1 per year	X	X
3.	Total Nitrogen (TKN, mg/kg)	2	1 per year	X	X
4.	Phosphorus (plant available, mg/kg)	3	1 per year	X	X
5.	Potassium (plant available, mg/kg)	3	1 per year	X	X
6.	Sodium (plant available, mg/kg)	3	1 per year	X	X
7.	Magnesium (plant available, mg/kg)	3	1 per year	X	X
8.	Calcium (plant available, mg/kg)	3	1 per year	X	X
9.	Electrical Conductivity	4	1 per year	X	X
10.	Soil Water pH (S.U.)	5	1 per year	X	X
11.	Total Arsenic (mg/kg)	6	1 per 5 years	X	N/A
12.	Total Cadmium (mg/kg)	6	1 per 5 years	X	N/A
13.	Total Chromium (mg/kg)	6	1 per 5 years	X	N/A
14.	Total Copper (mg/kg)	6	1 per 5 years	X	N/A
15.	Total Lead (mg/kg)	6	1 per 5 years	X	N/A
16.	Total Mercury (mg/kg)	6	1 per 5 years	X	N/A
17.	Total Molybdenum (mg/kg)	6	1 per 5 years	X	N/A
18.	Total Nickel (mg/kg)	6	1 per 5 years	X	N/A
19.	Total Selenium (mg/kg)	6	1 per 5 years	X	N/A
20.	Total Zinc (mg/kg)	6	1 per 5 years	X	N/A

1. Determined in a 1 N KCl soil extract (http://soiltesting.tamu.edu/webpages/swftlmethods1209.html).
2. Determined by Kjeldahl digestion or an equivalent accepted procedure. Methods that rely on Mercury as a catalyst are not acceptable.
3. Mehlich III extraction (yields plant-available concentrations) with inductively coupled plasma.
4. Electrical Conductivity (EC) - determined from extract of 2:1 (volume/volume) water/soil mixture and expressed in dS/m (same as mmho/cm).
5. Soil pH must be analyzed by the electrometric method, Method 9045C, in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" EPA SW-846, as referenced in 40 CFR §260.11 - determined from extract of 2:1 (volume/volume) water/soil mixture.
6. Analysis for metals in soil must be performed according to methods outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" EPA SW-846; method 3050B.
7. All parameters must be analyzed on a dry weight basis, except Soil Water pH and Electrical Conductivity.

XIII. STANDARD PROVISIONS:

A. This permit is granted in accordance with the Texas Water Code, Texas Health and Safety Code, the rules and other Orders of the Commission and other applicable laws of the State of Texas.

B. Unless specified otherwise, any noncompliance which may endanger human health or safety, or the environment shall be reported to the TCEQ. A report of such information must be provided orally or by facsimile transmission (FAX) to the TCEQ Regional Office (MC Region 12) within 24 hours of becoming aware of the noncompliance. A written submission of such information must also be provided to the TCEQ Regional Office (MC Region 12) and to the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. The written submission must contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated amount of time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

C. Any noncompliance other than that specified in Standard Provision B, or any required information not submitted or submitted incorrectly, must be reported to the TCEQ Enforcement Division (MC 224) as promptly as possible.

D. Acceptance of this permit constitutes an acknowledgment and agreement that the permittee shall comply with all the terms, provisions, conditions, limitations and restrictions embodied in this permit and with the rules and other Orders of the Commission and the laws of the State of Texas. Agreement is a condition precedent to the granting of this permit.

E. Prior to any transfer of this permit, Commission approval must be obtained. The Commission must be notified, in writing, of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 150) of the Water Quality Division.

F. The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit will control.

G. The permittee is subject to the provisions of 30 TAC §305.125.

H. The permittee shall remit to the Commission annual fees per 30 TAC §312.9. Failure to pay the fees on time may result in revocation of this permit.

I. The permittee does not have a vested right in this permit.

J. The permittee may not accept Class B sludge unless the sludge has been transported to the land application unit in a covered container with the covering firmly secured at the front and back.

K. This permit does not allow for the land application of chemical toilet waste, grease and grit trap waste, milk solids, or similar non-hazardous municipal or industrial solid wastes.

XIV. SPECIAL PROVISIONS:

A. For the first year of this permit, the maximum sludge application rate shall not exceed 10.59 dry tons per acre on Field 1, 11.40 dry tons per acre on Field 2, and 11.56 dry tons per acre on Field 3. On an annual basis, the sludge application rate shall be calculated and adjusted for each field based on current sludge and soil monitoring results. This application rate that is submitted for each field in each annual sludge report shall not exceed the overall maximum sludge application rate of 12 dry tons per acre per year.

B. During times of land application of sludge, all buffer zones (including surface water buffers) must be distinguished from each other by the use of flags, posting or fencing to ensure that buffer areas and land application areas remain separate.

The application areas Field 1, Field 2, and Field 3 must be distinguished from each other by the use of flags, posting, or fencing to ensure that each field remains separate.

C. The permittee shall consider nutrient management practices appropriate for the land application of sewage sludge and assess the potential risk for nitrogen and phosphorus to contribute to water quality impairments. Information and assistance on a certification program for Nutrient Management Specialists is available online at http://nmp.tamu.edu.

Nutrient management shall be practiced within the context of the Natural Resources Conservation Service Code 590 Practice Standard, which addresses the kind, source, placement, form, amount, timing, and application method of nutrients and soil amendments. This is available online at:
http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046896.pdf

The 590 Standard should be conducted using the Phosphorus Index, a simple screening tool used to rank vulnerability of fields as sources of phosphorus loss to surface runoff. Information on the Phosphorus Index is available online at:
http://efotg.sc.egov.usda.gov/references/public/TX/TXTechNote15_December_2012_Texas_P Index.pdf

The annual analysis of extractable phosphorus in soil samples shall be conducted using the Mehlich III extraction with inductively coupled plasma.

D. All sludge staging areas shall be located outside the buffer zones required by 30 TAC §312.44(c).

E. The permittee shall use cultural practices to promote and maintain the health and propagation of the Bermuda grass and Rye grass and avoid plant lodging. The permittee shall manage the established cover by grazing, cutting, or cutting and removing the grass to ensure the health and long-term permanency of the approved vegetative cover. Grazing, cutting, and cutting and removing vegetation dates shall be recorded in a log book kept on-site to be made available to TCEQ personnel upon request.

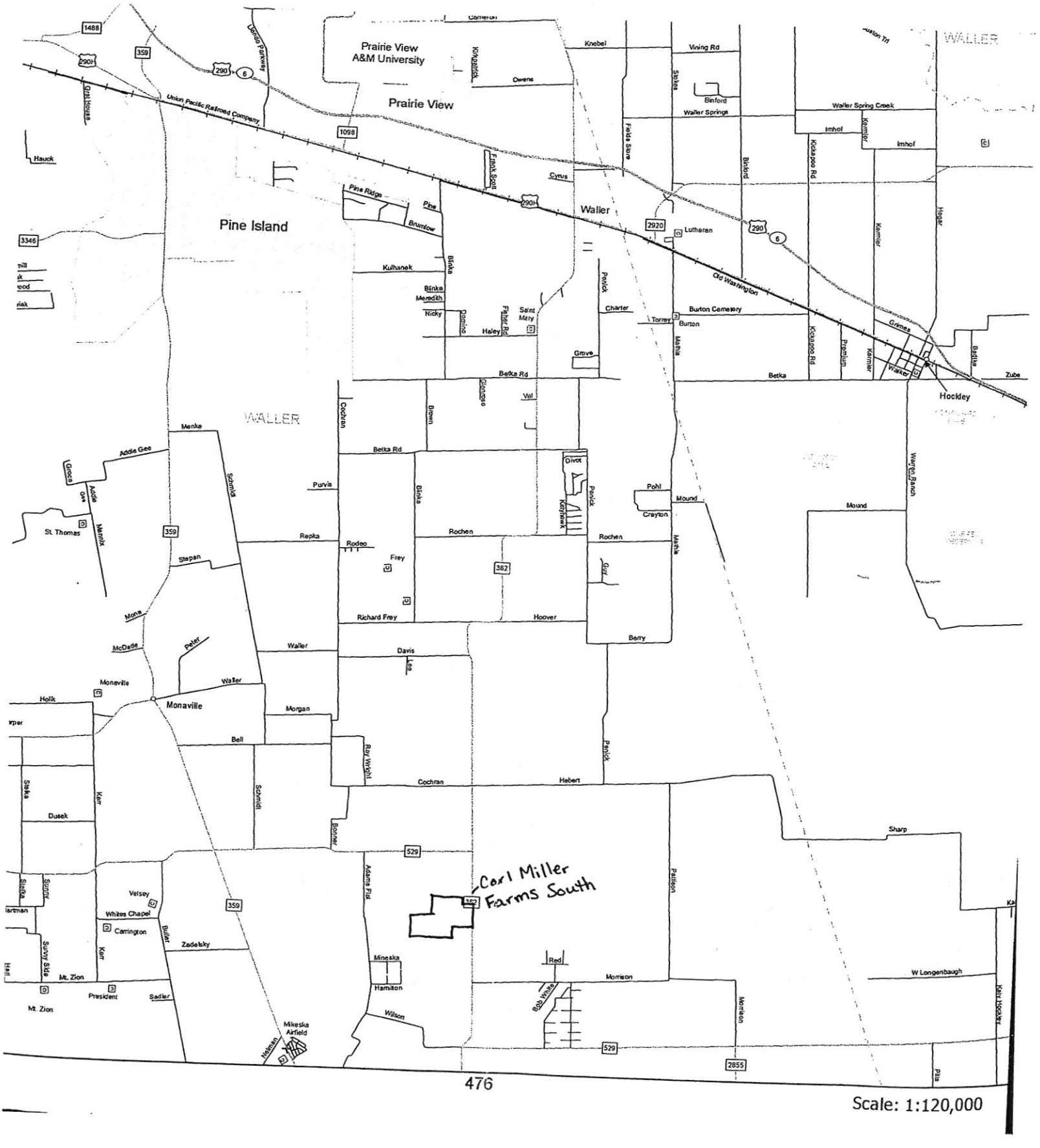
F. If wastewater applications are anticipated for periods other than June through October on Aris, Katy, Styx, and Verland soils, the permittee shall install water table observation wells at the lowest elevation of the application field. The wells shall be screened to measure water tables between 0.5 and 4.5 feet below the soil surface. Land application of wastewater in these fields shall be prohibited when the wells show a water table within 3 feet of the soil surface. Depths to water tables for dates receiving effluent applications shall be recorded in a log book kept on site to be made available to TCEQ personnel upon request.

G. Sludge land applied at a distance of 33 feet from all ditches, ponds, creeks, and waterways out to 200 feet from such waterways shall be incorporated into the soil in these areas.

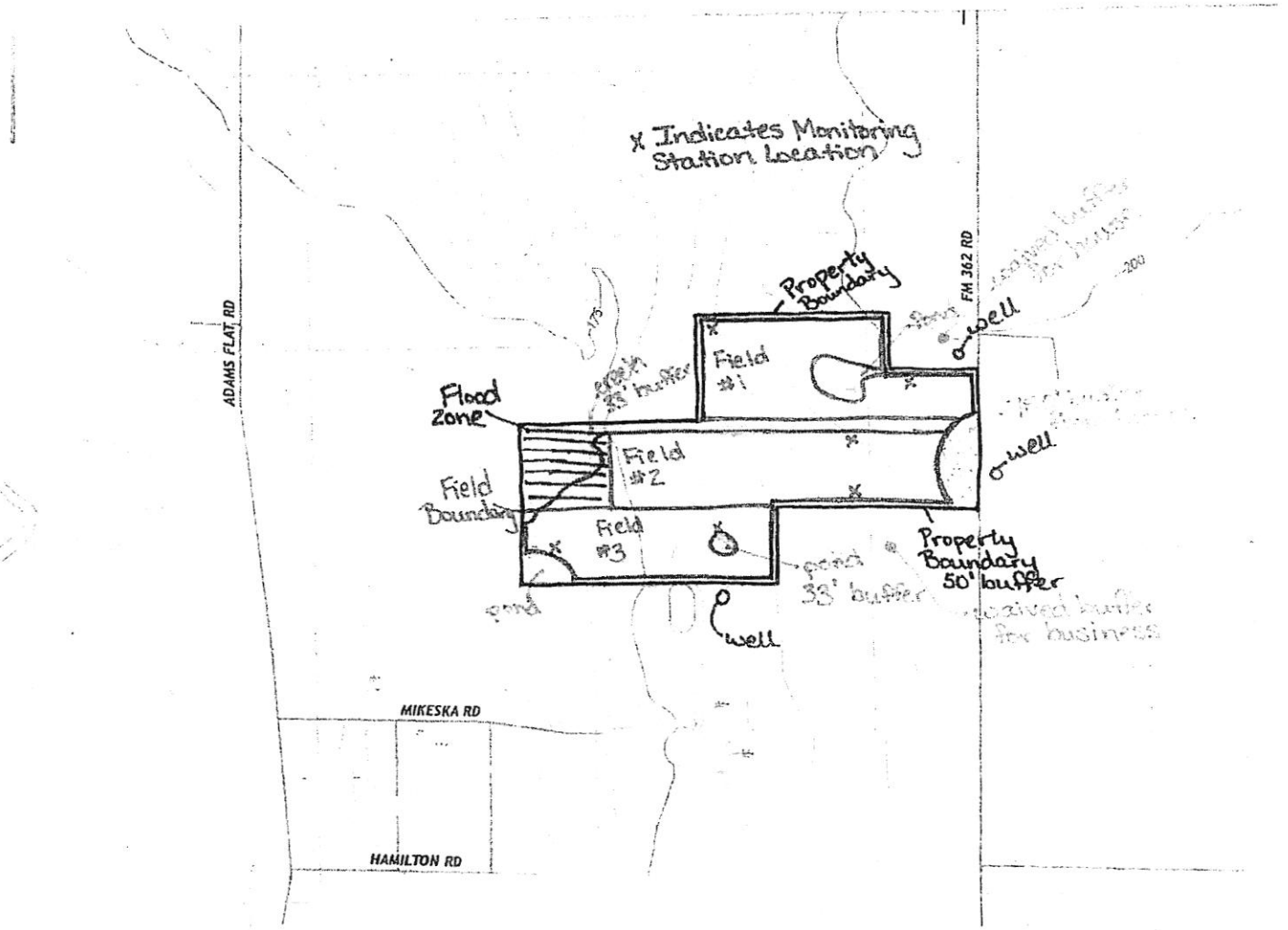
H. For soils with permeability greater than two inches per hour and less than 20 inches per hour, the land application of sludge is prohibited if the soil is saturated or groundwater is present within a depth of four feet of the treatment zone as demonstrated through the determination of the presence or absence of the perched or apparent water table. Records of monitoring data shall be maintained per 30 TAC §312.47. In the absence of groundwater monitoring, land application of sludge is prohibited during months that the most recently published soil survey data indicates that a perched or apparent water table may be present within four feet of the treatment zone.

I. For soils with permeability less than two inches per hour, the land application of sludge is prohibited if the soil is saturated or groundwater is present within a depth of three feet of the treatment zone as demonstrated through the determination of the presence or absence of the perched or apparent water table. Records of monitoring data shall be maintained per 30 TAC §312.47. In the absence of groundwater monitoring, land application of sludge is prohibited during months that the most recently published soil survey data indicates that a perched or apparent water table may be present within three feet of the treatment zone.

Attachment A



Attachment B



SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2

1000 500 0 METERS 1000 2000

1 0.5 0 MILES 1

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

FEET

CONTOUR INTERVAL 5 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

2 920 000 FEET 211 212 213 214 57'30" 215

ed by the United States Geological Survey
erican Datum of 1983 (NAD83)
odetic System of 1984 (WGS84). Projection and
ter grid: Universal Transverse Mercator, Zone 15R
ot ticks: Texas Coordinate System of 1983 (south
one)

is not a legal document. Boundaries may be
ed for this map scale. Private lands within government
nds may not be shown. Obtain permission before
ering lands.

MAGNETIC NORTH
U.S. Census Bureau
GRID NORTH

MN
GN
3° 2'
54 MILS
1° 28'
26 MILS

UTM GRID AND 2016 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid

Attachment C

Annual 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 note, in addition to the summary form, you need to submit all information as required by 30 TAC 312.48.

Note 3: If you operate other registered/permitted sludge land application sites, a form should be submitted for each site.

Note 4: Also send one complete copy of your report and this form to the TCEQ regional office in your area.

For TCEQ Fiscal Year: _____ Reporting period: From September 1, _____ to August 31, _____

Registration No: _____ Date _____

Name of Registrant: _____

Mailing Address: _____

_____

Contact Person: Name: Telephone No:

Field No. (if any): _____ (Please submit a separate form for each field)

1. Sewage Sludge:
   - a. Land Applied: _____ dry tons/year
   - b. Disposed via Monofill: _____ dry tons/year
   - c. Disposed via MSW Landfill: _____ dry tons/year
2. Treated Domestic Septage - Land Applied: _____ gallons/year
   - a. Method used to treat Domestic Septage: _____
3. Water Treatment Plant Sludge:
   - a. Land Applied: _____ dry tons/year
   - b. Dedicated Land Disposal: _____ dry tons/year
   - c. Disposed via Monofill: _____ dry tons/year
4. Class A sludge land applied: dry tons/year
5. Acreage used for sludge application/disposal at this site: _____ acres
6. Site vegetation (such as grass type etc.) and number of cuttings: _____

Sewage Sludge only – Please provide information regarding the following 3 items:

1. Does any of the sludge you have generated or received exceed the concentration limits for the metals listed in Table 3 of 30 TAC §312.43 (b)? Yes ☐ No ☐
2. Has your field/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 ☐ No ☐
3. Has sewage sludge been applied to the field/site after 90% of cumulative metal loading rates for any of the metals per Table 2 of 30 TAC §312.43 (b) been reached? Yes ☐ No ☐

PLEASE MAIL THE COMPLETED ANNUAL REPORT TO:

Texas Commission on Environmental Quality
Land Application Team (MC 150)
Water Quality Assessment Section
P.O. Box 13087
Austin, TX 78711-3087

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 Fiscal Year: _____ Reporting period: From September 1, _____ to August 31, _____

Registration No: _____ Date _____

Name of Registrant: _____

Mailing Address: _____

_____

Contact Person: Name: Telephone No:

Field No. (if any): _____ (Submit separate form for each field)

1. Class B Sewage Sludge Land Applied: _____ dry tons /quarter
2. Treated Domestic Septage Land Applied: _____ gallons / quarter
3. Method used to treat Domestic Septage: _____
4. Water Treatment Plant Sludge Land Applied: _____ dry tons /quarter
5. Class A sludge land applied: _____ dry tons /quarter
   a. Acreage used for Sludge Application/disposal at this site _____
   b. Site Vegetation (such as grass type etc.) and # of cuttings _____
   c. Does any of the sludge you have generated or received exceed concentration limits for any of the metals listed in Table 3 of 30 TAC §312.43 (b)? Yes ☐ No ☐
   d. Site location: Latitude: _____ Longitude: _____
   e. Site physical address: _____

_____

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
Land Application Team (MC 150)
Water Quality Assessment Section
P.O. Box 13087
Austin, TX 78711-3087