The Texas Commission on Environmental Quality (TCEQ, agency, or commission) adopts the amendments to §§312.4, 312.8, 312.10 - 312.13, 312.41, 312.42, 312.44, 312.45, 312.47, 312.50, 312.65, and 312.81 - 312.83.

The commission adopts the amendments to §§312.4, 312.8, 312.10, 312.11, 312.41, 312.42, 312.44, 312.47, 312.50, and 312.82 *with changes* to the proposed text as published in the April 11, 2014, issue of the *Texas Register* (39 TexReg 2773). The commission also adopts the amendments to §§312.12, 312.13, 312.45, 312.65, 312.81, and 312.83 *without changes* to the proposed text, and therefore, will not be republished.

Background and Summary of the Factual Basis for the Adopted Rules

On May 13, 2013, the TCEQ received a petition from Mr. Cole Turner (petitioner), on behalf of the landowners and citizens of Ellis County (Project Number 2013-033-PET-NR).

The petitioner requested that TCEQ amend Chapter 312 in order to prohibit the land application of sewage sludge in, or within, three miles of a city limit in a county with a population of 140,000 or more that is located adjacent to a county with a population between 2,000,000 and 4,000,000.

On June 18, 2013, the commissioners instructed the executive director to examine the

issues raised in the petition and to initiate a rulemaking proceeding to address nuisance odor issues at bulk sewage sludge land application sites on a statewide basis. As part of this rulemaking proceeding, the commission instructed the executive director to engage stakeholders and to report back to the commission with findings and recommended actions, if any, within five months.

The Water Quality Division and Regional office staff conducted site visits at various wastewater treatment plants (WWTPs), sewage sludge processing facilities and bulk sewage sludge land application sites throughout the state. The objective was to evaluate different types of bulk sewage sludge treatment processes and evaluate odors at several sewage sludge processing and land application sites. Staff concluded that sewage sludge facilities that use more advanced treatment processes such as heat drying or composting tend to have more typical odors than those that do not.

The executive director held stakeholder meetings in Parker, Ellis, Waller, and Travis Counties. The comments received at the stakeholder meetings and in writing included support for and against the petition.

At the November 20, 2013, Commissioners Agenda, the executive director recommended initiating a state-wide rulemaking rather than the three-mile prohibition requested in the petition. This recommendation to move forward with the rulemaking process was

based upon stakeholder comments requesting relief from odors, vectors, unauthorized discharges from land application sites, tracking of material on roadways and staff observations during site visits. The commissioners instructed the executive director to proceed with releasing draft rule concepts and draft rule language to stakeholders.

The executive director's concept for rulemaking includes separating existing Class A into two categories, Class A and Class AB, and including additional management provisions to address odor. The management provisions for each category become more stringent as the treatment processes used for pathogen reduction are less advanced. This approach provides additional incentives for permittees to select more advanced pathogen treatment processes which tend to reduce odors (composting, heat drying, pasteurization, and other equivalent processes) and to promote land application through incorporation into the soil, when feasible.

A concern provided during the stakeholder meetings was TCEQ's inability to respond quickly to odor complaints and prevent recurrences. Therefore, in addition to the changes to sludge classification, the rules would clarify the executive director's existing ability to include additional, more stringent requirements to any Class A, AB, or B site such as requiring an Odor Control Plan with measurable goals, as needed. This would allow TCEQ investigators to determine compliance with specific permit conditions designed to address odor and other compliance issues at a specific site and aid in

addressing recurrent issues. In addition, staff evaluated existing requirements within Chapter 312 for Class B sites, which could be applied to all sites to address odor.

On January 7, 2014, the Water Quality Division conducted its final stakeholder meeting to present concepts and draft rule language for informal comment.

Section by Section Discussion

The commission is adopting to add new Class AB throughout the entire rulemaking where appropriate.

Because the definitions of Class A, adopted Class AB and Class B, found in §312.8, includes the word "sewage" before the word "sludge," and certain sections of the rule currently state only the word "sludge" after Class A or Class B, the commission is adopting to add the word "sewage" before the word "sludge" throughout this rulemaking adoption. The reason for this change is to maintain consistency in the rules.

Instances where sewage sludge is referenced in the same sentence will not include "sewage" or "sludge" after Class A, Class AB or Class B.

§312.4, Required Authorizations or Notifications

The commission adopts amended §312.4(b), (b)(1) and (4) to include "Class AB" due to

its applicability to notice and reporting requirements.

The commission adopts amended §312.4(c)(1) to include "Class AB" due to its applicability to registration requirements.

The commission adopts amended §312.4(b)(2) to replace "Land Application Team" with "Water Quality Division" for addressing notification forms of Class A or Class AB sewage sludge land application sites.

The commission adopts the change sewage sludge "composition" to "classification" when requiring notification of Class A or Class AB sewage sludge land application in §312.4(b)(2)(A). Both Class A and new Class AB will now require notification, and it is important to distinguish between the two classes because they have different site management conditions. Also, the commission is adding a requirement to include longitude and latitude coordinates for land application sites, in §312.4(b)(2)(B), when sending notification to the Water Quality Division for Class A or Class AB sewage sludge land application sites. This requirement will aid in determining the location of each land application site.

The commission adopts amended §312.4(b)(2)(D) by requiring the submittal of a map prior to land application for a notified Class AB land application site which shows the

buffer zone areas required under §312.44(c)(2)(D) and (E).

The commission adopts amended §312.4(b)(4) by requiring an operator to include an updated list of persons receiving the sewage sludge in each annual Class A or Class AB sewage sludge land application report. Since Class A and Class AB notifications do not expire, it will assist the TCEQ in keeping an up-to-date list of the receivers of sewage sludge for land application.

§312.8, General Definitions

The commission adopts amended §312.8(17) which provides more clarification to the definition of Class A sewage sludge by adding §312.82(a)(1)(B) when describing it as sewage sludge meeting the pathogen reduction requirements in §312.82(a)(1)(B). This is to distinguish Class A sewage sludge from the new requirements of Class AB sewage sludge.

The commission adopts amended §312.8 which provides for the definition for Class AB sewage sludge to distinguish it from the other classifications of sewage sludge that are currently in the rule. The Class AB sewage sludge definition is in §312.8(18), and due to this addition, all existing definitions that follow paragraph (18) have been renumbered accordingly.

The commission adopts amended §312.8(54) by changing the word "that" to "than" to be grammatically correct for the definition of "Major sole-source impairment zone."

The commission adopts amended §312.8(74) by adding "or grit and screenings" to clarify what is excluded from sewage sludge.

The commission adopts amended §312.8(82) by adding "per each staging location" to clarify that sewage sludge is staged for seven days in different locations at a land application site.

§312.10, Permit and Registration Applications Processing

The commission adopts amended §312.10(g) to include the word "sewage" before the word "sludge" to be consistent with the definitions because the definitions of Class A, adopted Class AB and Class B, found in §312.8, include the word "sewage" before the word "sludge," and certain sections of the rule currently state only the word "sludge" after Class A or Class B. The commission also adopts amended §312.10(g) to include "Class AB" due to its applicability to the application processing procedures and requirements in 30 TAC §§281.18 - 281.20.

§312.11, Permits

The commission adopts amended §312.11(c)(1)(B)(iii) to change the reference from Class

A to Class B.

The commission adopts amended §312.11(d)(6) to include the word "sewage" before the word "sludge" to be consistent with the definitions. Since the definitions of Class A, adopted Class AB and Class B include the word "sewage" before "sludge" it is appropriate to be consistent with each term.

The commission adopts amended §312.11(g) by updating the Enforcement Division mail code identification number from MC 149 to Mail Code 224 for submittal of noncompliance information to the TCEQ. The Enforcement mail code number has changed since the current Chapter 312 rules were written. Also "MC" has been changed to "Mail Code" because there is no other reference to the MC acronym in prior sections of the rule.

§312.12, Registrations

The commission adopts amended §312.12(b) and (b)(1)(C)(iv) to include the word "sewage" before the word "sludge" to be consistent with the definitions. Since the definitions of Class A, adopted Class AB and Class B include the word "sewage" before "sludge" it is appropriate to be consistent with each term. The commission also adopts amended §312.12(b) and (b)(1)(C)(iv) to include" Class AB" due to its applicability to registrations.

§312.13, Actions and Notice

The commission adopts amended §312.13(c)(1) to include "Class AB" due to its applicability to notice requirements for registrations.

§312.41, Applicability

The commission adopts amended §312.41(b) by changing the applicability section because all classes of bulk sewage sludge will now be subject to new core requirements under §312.44(a), (b), (h)(3), (j), and (m).

The commission adopts amended §312.41(b)(1)(A) by adding applicability for the adopted Class AB sewage sludge requirements under §312.44(a), (b), (c)(2)(D) and (E), (d), (h)(1), (3), (5), and (6), (j), (l), and (m).

The commission adopts amended §312.41(b)(1)(B) to identify an exemption to the requirements under adopted §312.41(b)(1)(A) for Class AB sewage sludge when the sludge is injected or incorporated into the soil at the land application site.

The commission adopts the requirements pertaining to applicability for bulk sewage sludge in §312.41(b) to the applicability for General Requirements for Bulk Derived Materials in §312.41(c). Derived materials are the products that are produced when

sewage sludge is mixed with bulking agent. The bulking agent may be compost, straw, wood chips, saw dust, shredded brush, etc. and must follow the same requirements as bulk sewage sludge.

The commission adopts amended §312.41(d) to include "Class AB" due to its applicability to special requirements for certain bulk derived materials.

The commission adopts amended §312.41(e) to include "Class AB" due to its applicability to special requirements for bagged sludge.

The commission adopts amended §312.41(f) to include "Class AB" due to its applicability to bagged derived materials.

The commission adopts amended §312.41(g) to include "Class AB" due to its applicability to bagged materials.

§312.42, General Requirements

The commission adopts amended §312.42(i) to provide for when the applicant is to determine to concentration of regulated metals. The current rule refers to §312.12(a)(1)(E). The new reference to rule will be correctly listed as §312.12(b)(1)(I).

§312.44, Management Practices

The commission adopts amended §312.44(h)(3) to provide more clarity pertaining to prohibiting land application during certain surface conditions. Along with the current prohibitions associated with rainstorms or during periods in which surface soils are water-saturated, the rule will also include a new prohibition, "when pooling of water is evident on the land application site." This provision will be applicable to Class A, Class AB and Class B bulk sewage sludge land application sites.

The commission adopts amended §312.44(h)(3) by adding a requirement that will require the operator of a TCEQ permitted or bulk sewage sludge site subject to the notification requirements in §312.4(b) who land applies sewage sludge on agricultural land to submit an Adverse Weather and Alternative Plan that addresses actions to be taken when sewage sludge cannot be land applied due to adverse weather. This adopted requirement is intended to address possible odor conditions from adverse weather.

The commission adopts amended §312.44(j)(3) that currently states: "If necessary or when significant nuisance conditions occur" to "To prevent nuisance conditions from occurring". This change provides more clarity as to the intent of the requirement. Within the same subsection, the commission is replacing the word "objectionable" with "offensive" in §312.44(j)(3)(B) because the TCEQ odor complaint guidance uses the term "offensiveness" when assessing the frequency, intensity, duration and offensiveness (FIDO) classification. The commission adopts amended §312.44(j)(3)(C) which will

require an operator to develop and implement best management practices (BMPs) to minimize off-site tracking of sewage sludge and sediment during the transport of sewage sludge material to and from the land application site or storage area and to include at a minimum, removing tracked material, to the extent practicable, by the end of each day of operation at the site and either returning it to the site or otherwise disposing of it properly. The documented BMPs shall be retained by the operator and made be readily available for review by a TCEQ representative. Adopted §312.44(j)(3)(C) will be applicable to Class A, Class AB, and Class B bulk sewage sludge, and will help enforce against instances when sewage sludge debris has been tracked off-site and on to roadways.

The commission adopts amended §312.44(j)(4) to clarify the executive director's ability, on a case-by-case basis, to require a person who prepares sewage sludge or land applies sewage sludge on agricultural land to submit an Odor Control Plan. A typical Odor Control Plan may include the following elements: 1) identification of odor sources; 2) evaluation of the processing of the sludge source; 3) implementation of corrective action measures; 4) implementation of BMPs; 5) identification of milestones and deadlines of submittals; 6) professional engineer certification; and 7) submission of progress reports and a final report. The executive director would require a person who prepares sewage sludge or land applies sewage sludge on agricultural land to prepare and implement an Odor Control Plan in cases where nuisance odors from the processing, transport,

storage, or land application of sewage sludge have been substantiated by TCEQ staff. This paragraph also clarifies that the commission or executive director has the authority to require such a plan (as stated in §312.6). This provision will be applicable to Class A, Class AB and Class B bulk sewage sludge.

The commission adopts amended §312.44(l) by changing the term: "permit holder" to "operator" and adding Class AB sewage sludge. This is an existing requirement for Class B sewage sludge sites which will now also be applicable to Class AB sewage sludge sites. It will require the operator to post a sign that is visible from a publically accessible road or sidewalk that is adjacent to the premises on which the land application unit is located stating that a sewage sludge beneficial land application site is located on the premises. The commission also adopts timing requirements to the rule that would require the sign be posted three days prior to and 14 days after the commencement of land application of sewage sludge. In the event of reasonably unforeseen weather conditions or equipment failure that would necessitate a change in the planned land application site, the required sign must be posted on the day that sewage sludge land application commences. If signs are posted less than three days prior to land application, records shall be maintained documenting the unforeseeable circumstance that necessitated the change in a planned land application site. Such records shall be retained by the operator and be readily available for review by a TCEQ representative. Records of any deviation of the posting requirements listed in §312.44(l) and associated reasons shall be retained by the

operator and be readily available for review by a TCEQ representative. The required sign must include the operator name, telephone number, the classification of sewage sludge, and the TCEQ authorization number.

The commission adopts amended §312.44(m) to change the term: "permit holder" to "operator" and is adding Class A and Class AB sewage sludge. This is an existing requirement for Class B which will now be applicable to all classes of sewage sludge. It will require that trucks transporting sewage sludge are appropriately covered to prevent spillage of material during transport.

The commission adopts amended §312.44(m) to include: "All vehicles and equipment used for the transport of bulk Class A, Class AB or Class B sewage sludge for land application or disposal shall be constructed, operated, and maintained to prevent the loss of liquid or solid materials during transport."

§312.45, Operational Standards--Pathogens and Vector Attraction

The commission adopts amended §312.45(a)(1) - (3), to include "Class AB" due to its applicability to pathogen reduction requirements.

§312.47, Record Keeping

The commission adopts amended §312.47(a)(1)(B) and (C), (2)(B) and (C), and (3) to

include "Class AB" due to its applicability to record keeping requirements. The commission also adopts amended §312.47(a)(1)(B) and (C), (2)(B) and (C), (3), (4)(A)(ii) and (iii), (6)(C) and (D) to include the word "sewage" before the word "sludge" to be consistent with the definitions. Since the definitions of Class A, adopted Class AB and Class B include the word "sewage" before "sludge" it is appropriate to be consistent with each term.

The commission adopts amended §312.47(a)(5)(B)(ii) by changing units from "hectares" to "acres", because all sewage sludge land application sites are currently measured and reported in acres.

§312.50, Storage and Staging of Sludge at Beneficial Use Sites

The commission adopts §312.50(a)(10), which provides that an operator that prepares or land applies sewage sludge must comply with an Odor Control Plan if required under adopted §312.44(j)(4).

The commission adopts the amendment to the staging requirements in §312.50(c) to include that stage is allowed for a maximum of seven calendar days per location within a beneficial land application site and to allow, with prior approval from the TCEQ regional office, up to an additional 14 days for staging of sewage sludge. This allowance is intended to cover situations when more time would be needed due to weather conditions that would cause flooding, saturated soils, frozen soils or equipment failure. Also, written

records of the location of each staging area and timeframe in which sewage sludge was staged shall be retained by the operator and be readily available for review by a TCEQ representative. Additional language to this subsection also includes requirements for the operator to stage the sewage sludge away from odor receptors in order to minimize off-site dust migration and nuisance odors. The commission adopts to include the requirement that the operator make readily available for review by a TCEQ representative written records of the location of each staging area and the timeframe in which sewage sludge was staged.

§312.65, Operational Standards--Pathogen and Vector Attraction

The commission adopts amended §312.65(a) to include "Class AB" due to its applicability to pathogen and vector attraction reduction requirements. The commission also adopts amended §312.65(a) to include the word "sewage" before the word "sludge" to be consistent with the definitions. Since the definitions of Class A, adopted Class AB and Class B include the word "sewage" before "sludge" it is appropriate to be consistent with each term.

§312.81, Scope

The commission adopts amended §312.81(a) to include" Class AB" due to its applicability to pathogen and vector attraction reduction requirements.

§312.82, Pathogen Reduction

The commission adopts amended §312.82. Given the separation of the current Class A pathogen requirements into two classes: Class A and Class AB, the commission adopts amended §312.82(a)(1) to distinguish the pathogen requirements from Class A and Class AB. This separation of the two classes also required §312.82(a)(2) to be changed from Class A to Class AB and the addition of adopted §312.82(a)(1)(B) to specifically define the pathogen requirements of Class A, while allowing for a variance process that demonstrates an equivalent method for reducing odors. 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. For sludge to be categorized as Class AB, the density of fecal coliform in the sewage sludge must be less than 1,000 Most Probable Number (MPN) per gram of solids or the density of Salmonella in the sewage sludge must be less than three MPN per four grams of total solids and it must meet one of the pathogen alternatives listed under Alternatives 2, 3, and 4, which are listed in §312.82(a)(2). These alternatives include: Alternative 2 - high pH; Alternative 3 - temperature and time; and Alternative 4 - concentrations of enteric viruses and helminth ova (known and unknown processes). For sludge to be categorized as Class A, the density of fecal coliform in the sewage sludge must be less than 1,000 MPN per gram of solids or the density of Salmonella in the sewage sludge must be less than three MPN per four grams of total solids and it must meet one of the pathogen alternatives listed under Alternatives 1, 5, and 6, which are

listed in adopted §312.82(a)(3). Alternative 1 includes time and temperature. Alternative 5 includes Processes to Further Reduce Pathogens (PFRP). Examples of PFRP are composting, heat drying, heat treatment, thermophilic aerobic digestion or pasteurization. Alternative 6 is a process that is equivalent to a PFRP and requires United States Environmental Protection Agency approval.

§312.83, Vector Attraction Reduction

The commission adopts amended §312.83(b)(2) and (3) to change the word: "can not" to "cannot" to be grammatically correct.

The commission adopts amended §312.83(b)(9) to include "Class AB" due to its applicability to vector attraction reduction via injection of sewage sludge below the surface of the land.

The commission adopts amended §312.83(b)(10) to include "Class AB" due to its applicability to its applicability to vector attraction reduction via incorporation of sewage sludge into the soil.

Final Regulatory Impact Determination

The commission reviewed the adopted rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225 and determined that the

rulemaking is not subject to Texas Government Code, §2001.0225 because it does not meet the definition of a "major environmental rule" as defined in that statute. Texas Government Code, §2001.0225 applies to "major environmental rules" the result of which are to exceed standards set by federal law, express requirements of state law, requirements of a delegation agreement between state and the federal governments to implement a state and federal program, or rules adopted solely under the general powers of the agency instead of under a specific state law.

A "major environmental rule" is a rule, the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector or the state. The adopted rulemaking does not adversely affect, in a material way, the economy, a section of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The specific intent of the adopted rulemaking is to ensure regulatory consistency by expanding existing "core requirements" to all classifications of sewage sludge, establish a more comprehensive regulatory classification for sewage sludge and clarify the executive director's authority to include additional requirements in the regulation of land application of sewage sludge. The adopted rulemaking affects the same class of regulated entities, except that the entities may be subject to more or less stringent requirements

depending on the processes employed by those entities.

The adopted rulemaking modifies the state rules related to land application of sewage sludge. This will have an impact on the environment, human health, or public health and safety; however, the adopted rulemaking will not adversely affect the economy, a sector of the economy, productivity, competition, or jobs within the state or a sector of the state. Therefore, the commission concludes that the adopted rulemaking does not meet the definition of a "major environmental rule."

Furthermore, even if the adopted rulemaking did meet the definition of a "major environmental rule," it is not subject to Texas Government Code, §2001.0225 because it does not meet any of the four applicable requirements specified in Texas Government Code, §2001.0225(a). Texas Government Code, §2001.0225(a) applies only to a state agency's adoption of a major environmental rule that: 1) exceeds a standard set by federal law, unless state law specifically requires the rule; 2) exceeds an express requirement of state law, unless federal law specifically requires the rule; 3) exceeds a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) is adopted solely under the general powers of the agency instead of under a specific state law.

In this case, the adopted rulemaking does not meet any of the four requirements in Texas Government Code, §2001.0225(a). First, this rulemaking does not exceed standards set by federal law. Second, the adopted rulemaking does not exceed an express requirement of state law, but rather changes the requirements under state law to ensure regulatory consistency, regulate more comprehensively the land application of sewage sludge, and clarify the executive director's authority related to regulating land application of sewage sludge. Third, the adopted rulemaking does not exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program. Finally, the commission adopts the rulemaking under Texas Water Code, §§5.013, 5.102, 5.103, 5.120, 26.011, 26.027, and 26.041. Therefore, the commission does not adopt the rules solely under the commission's general powers.

The commission invited public comment regarding the draft regulatory impact analysis determination during the public comment period. No comments were received on the draft regulatory impact analysis determination.

Takings Impact Assessment

The commission evaluated the adopted rulemaking and performed an analysis of whether it constitutes a taking under Texas Government Code, §2007.043. The following is a summary of that analysis. The specific purpose of the adopted rulemaking is to

modify the Texas Administrative Code to ensure regulatory consistency by expanding existing "core requirements" to all classifications of sewage sludge, establish a more comprehensive regulatory classification for sewage sludge and clarify the executive director's authority to include additional requirements in his regulation of land application of sewage sludge. The adopted rulemaking will substantially advance this stated purpose by adopting language intended to regulate more comprehensively the land application of sewage sludge.

Promulgation and enforcement of the adopted rules will not be a statutory or constitutional taking of private real property. Specifically, the adopted rulemaking does not apply to or affect any landowner's rights in private real property because it does not burden (constitutionally), restrict, or limit any landowner's right to real property and reduce any property's value by 25% or more beyond that which would otherwise exist in the absence of the regulations. These actions will not affect private real property.

Consistency with the Coastal Management Program

The commission reviewed the rulemaking and found that the adoption is a rulemaking identified in the Coastal Coordination Act Implementation Rules, 31 TAC §505.11(b)(2), relating to rules subject to the Texas Coastal Management Program (CMP) in accordance with the Coastal Coordination Act, Texas Natural Resources Code, §§33.201 *et seq.*, which therefore, requires that the goals and policies of the CMP be considered during the

rulemaking process.

CMP goals applicable to the adopted rules include protection, preservation, restoration, and enhancement of the diversity, quality, quantity, functions, and values of coastal natural resource areas. Ensuring sound management of all coastal resources that balances the benefits of economic development with multiple human uses of the coastal zone, while enhancing planned public access to and enjoyment of the coastal zone in a manner that is compatible with private property rights and other uses of the coastal zone.

CMP policies applicable to the adopted rules include 31 TAC §501.13(a)(1) and (2) that mandate commission rules, require applicants to provide necessary information so that the commission makes an informed decision on a adopted action listed in 31 TAC §505.11 (relating to Actions and Rules Subject to the CMP), and identify the monitoring needed to ensure that activities authorized by actions listed 31 TAC §505.11 comply with all applicable requirements.

The adopted rulemaking ensures regulatory consistency by expanding existing "core requirements" to all classifications of sewage sludge, establishes a more comprehensive regulatory classification for sewage sludge, and clarifies the executive director's authority to include additional requirements in his regulation of land application of sewage sludge.

By adopting these rules, there will be greater protection in the areas of concern to the CMP.

The commission conducted a consistency determination for the adopted rules in accordance with Coastal Coordination Act Implementation Rules, 31 TAC §505.22 and found the rulemaking is consistent with the applicable CMP goals and policies. Promulgation and enforcement of these rules will not violate or exceed any standards identified in the applicable CMP goals and policies because the adopted rules are consistent with those CMP goals and policies and because these rules do not create or have a direct or significant adverse effect on any coastal natural resource areas.

The commission invited public comment regarding the consistency with the CMP during the public comment period. No comments were received on the CMP.

Public Comment

The commission held a public hearing on May 6, 2014, in Austin. The comment period closed on May 12, 2014. The commission received comments from Alan Plummer Associates, Inc.; the City of Dallas; the City of Fort Worth; The Honorable Paul Perry, County Commissioner, Precinct 3 of Ellis County (Commissioner Perry); Renda Environmental, Inc.; Synagro Technologies, Inc.; the Texas Compost Council; the Water Environment Association of Texas (WEAT); Texas Association of Clean Water Agencies

(TACWA); and two individuals.

Response to Comments

Comment

Alan Plummer Associates, Inc. commented that the description and discussion on §312.41(b)(1)(A) needs to be revised because the provisions listed, which are proposed to be applicable land application of Class AB sewage sludge are not correct. The list includes §312.44(c)(2), which is the section addressing all types of buffer zones. Only the buffer zones specified in §312.44(c)(2)(D) and (E) are required for land application of Class AB sewage sludge. Therefore, the list should be revised.

WEAT and TACWA found this as an inconsistency that may lead to confusion and recommend a careful review to eliminate this inconsistency and to provide clarity. The City of Dallas and Synagro Technologies both support WEAT and TACWA's comments.

Response

The TCEQ acknowledges this typographical error and has changed the Section by Section Discussion in the adopted preamble for §312.41 to replace §312.44(c)(2) with §312.44(c)(2)(D) and (E) when requiring buffer zones for land application of Class AB sewage sludge.

Comment

Alan Plummer Associates, Inc. commented that the description and discussion in the proposed preamble that refers to §312.41(c), needs to be revised because the description of and discussion about bulk derived materials is incorrect. Derived materials are not the products that are added to sewage sludge, but are instead the products that are produced when sewage sludge is mixed with bulking agent, which may be compost, straw, wood chips, saw dust, shredded brush, etc. It is incorrect to use the term "derived sewage sludge" when describing bulking agents.

In addition, the revision proposed to §312.41(c) refers to "bulk derived sewage sludge." The spelling, as well as, the terminology is not correct. The proper term is "derived material from sewage sludge." The term "derived material from sewage sludge" is consistent with the section heading and the term used in the existing regulations. WEAT and TACWA found this as an inconsistency that may lead to confusion and recommend a careful review to eliminate this inconsistency and to provide clarity. The City of Dallas and Synagro Technologies both support WEAT and TACWA's comments.

Response

The TCEQ agrees with this comment and has changed the Section by Section Discussion in the adopted preamble for §312.41(c) to state that derived materials are the products that are produced when sewage sludge is mixed

with a bulking agent and that the bulking agent may be compost, straw, wood chips, saw dust, shredded brush, etc. and must follow the same requirements as bulk sewage sludge.

Comment

Alan Plummer Associates, Inc. commented that the discussion in the proposed preamble regarding revisions to §312.42(i) ("The applicant shall determine the concentration of regulated metals in accordance with §312.12(a)(1)(E)...") needs to be revised. The proposed revision, intended to clarify when a permittee must conduct metals analyses, removes the reference to §312.12(a)(1)(E), but incorrectly references §312.43 (relating to Metal Limits). The correct reference should be §312.12(b)(1)(I) instead of §312.43. Section 312.43 addresses only the applicable quality criteria for metals, and does not address when permittees must conduct metals analyses.

The requirements specified in §312.12(b)(1)(I), however, describe the protocols for collecting soil samples as required for an application. The protocol specified in §312.12(b)(1)(I), is also consistent with the protocols specified in §312.12(a)(1)(E) of the 1995 version of the rules. WEAT and TACWA found this as an inconsistency that may lead to confusion and recommend a careful review to eliminate this inconsistency and to provide clarity. The City of Dallas and Synagro Technologies both support WEAT and TACWA's comments.

Response

The TCEQ agrees with this comment and has corrected §312.42(i) to reference §312.12(b)(1)(I).

Comment

Alan Plummer Associates, Inc. commented that the discussion under §312.11(c)(1)(B)(iii), submission of adjacent landowner information, needs to be revised because the authorization for conducting land application of Class A and Class AB sewage sludge does not require a permit to be obtained. Therefore, the proposed revision to the permit application provisions and the intent for this revision as indicated in the Background and Summary are inconsistent. WEAT and TACWA found this as an inconsistency that may lead to confusion and recommend a careful review to eliminate this inconsistency and to provide clarity. The City of Dallas and Synagro Technologies both support WEAT and TACWA's comments.

Response

The TCEQ agrees with this comment and has deleted "or Class A or sewage sludge beneficial use land application", and changed Class AB to Class B in §312.11(c)(1)(B)(iii).

Comment

Alan Plummer Associates, Inc. commented that the discussion under §312.50(a)(10) needs to be revised because the terms are inconsistent within the provision. The plan is referred to as an "Odor Control Plan" in one place and an "Odor Prevention Plan" in another. WEAT and TACWA found this as an inconsistency that may lead to confusion and recommend a careful review to eliminate this inconsistency and to provide clarity. The City of Dallas and Synagro Technologies both support WEAT and TACWA's comments.

Response

In response to this comment, the TCEQ has changed the term "Odor Prevention" to "Odor Control" in §312.44(j)(4).

Comment

An individual commented that the use of biosolids should be plowed into the ground so that it will allow the product to break down into the soil and reduce the contamination of run-off water. The individual further commented that plowing biosolids in the ground will help with the smell and will be more appropriate for what is considered beneficial use instead of leaving the material on top of the ground where it takes a long time to break down.

Response

The TCEQ respectfully disagrees and cannot require all land application sites state-wide to plow or incorporate the sewage sludge into the soil. Many land application sites throughout the state grow crops throughout the year that are pastureland crops such as Coastal Bermuda grass or ryegrass. Requiring only plowing or incorporating the biosolids into the ground would not be feasible for most of these sites. No change was made in response to this comment.

Comment

Commissioner Perry commented that there needs to be additional regulation regarding the use of human waste-derived sludge in unincorporated areas and that the sludge is being distributed in areas that frequently flood resulting in the sludge being transported into creeks and waterways. Commissioner Perry is also concerned about the effect that continued use of sewage sludge will have upon tax valuations, quality of life, public health and quality of development.

Response

The primary objective of the TCEQ's Beneficial Land Use Program is to ensure that the use of treated sewage sludge will neither endanger the public health nor degrade the environment. Beneficial land use site

locations must be selected and the site operated in a manner to prevent public health nuisances and only properly treated materials that have met rigid requirements to reduce vector attraction and to significantly reduce pathogens are approved for land application. In addition, §312.44 outlines detailed management practices which include buffer zone requirements for both Class AB and Class B sewage sludge that restrict how close a land application area may be located to property boundaries, public right of ways, residences, schools or businesses to minimize the potential for causing nuisance conditions.

The operator of a sewage sludge land application site is required to adhere to certain conditions for the application of the treated sewage sludge. The material must be applied uniformly over the surface of the land and 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. Sewage sludge debris must be prevented from blowing or running off site boundaries or into surface waters and must not be applied to a site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other water in the state.

TCEQ does not have regulatory or statutory authority to consider property values, the marketability of adjacent property, or economic development in its determination of whether to issue a water quality permit. No change was made in response to these comments.

Comment

Commissioner Perry is concerned that there are budget-busting effects that the hundreds of tractor trailer-sized deliveries are having on the 290 plus miles of roads and bridges.

Response

The water quality permitting process is limited to controlling the discharge of pollutants into water in the state and protecting the water quality of the state's rivers, lakes, and coastal waters. The TCEQ does not have jurisdiction under the Texas Water Code or its regulations to address or consider maintenance or construction of roads and the TCEQ's jurisdiction is limiting to addressing problems occurring on county roads relating to spills of sewage sludge. The county is responsible for taking action on problems related to the integrity of the county roads. No change was made in response to this comment.

Comment

The Texas Compost Council commented that in the proposed rule language, it now appears to apply to any site where bulk sewage sludge products are applied. Most sales of biosolids compost fall into the bulk products category and usually are delivered in one day and it makes no sense to require each of these customers to "submit an Adverse Weather and Alternative Plan" as described in §312.44(h)(3). The thousands of "Plans" required by compost sales will create an unnecessary burden on the compost industry and create a mountain of paperwork for the TCEQ to manage, without providing any benefit to the waters and environment of the state.

The Texas Compost Council suggested adding "permitted and registered" to §312.44(h)(3) when requiring an Adverse Weather and Alternative Plan so that it clarifies the intent and reduce the unnecessary work load for the regulated industry and the TCEQ.

WEAT and TACWA have also expressed concern about the requirement of an Adverse Weather and Alternative Plan as described in §312.44(h)(3). It is WEAT and TACWA's position that the requirement was neither intended, nor would be realistic to extend to sites where compost, heat-dried biosolids or biosolid-derived soils are used on home lawns, highway rights-of-ways, sports fields, etc. Therefore, WEAT and TACWA recommend that the Adverse Weather and Alternative Plan be applicable only to land

application sites where biosolids are applied for agricultural use. The City of Dallas and Synagro Technologies both support WEAT and TACWA's comments.

Response

The Chapter 312 rule revisions were not in any way intended to affect the composting industry or for public contact sites in which heat-dried biosolids or biosolid-derived soils that are used on home lawns, highway rights-of-ways, sports fields, cemeteries, public parks, etc., and have a high potential for contact by the public. The TCEQ agrees and has changed §312.44(h)(3) to state that the operator of a TCEQ permitted or bulk sewage sludge site subject to the notification requirements in §312.4(b) who land applies sewage sludge on agricultural land shall submit an Adverse Weather and Alternative Plan. Agricultural land, by definition is land on which a food crop, a feed crop, or a fiber crop is grown and includes range land used as pasture.

Comment

Synagro Technologies, Inc. expressed concern that additional burdensome regulations, like those being proposed in the rule will cause the cities and agencies to face more difficulty finding methods to recycle or dispose of their biosolids in both the short and long term, and available beneficial use management options are typically and

unnecessarily much more expensive to taxpayers. Once rules are adopted, further restrictions and bans elsewhere, characteristically based on misinformation and anti-urban sentiment rather than science. Synagro Technologies, Inc. is also concerned that the enforcement of the proposed rules will harm public agencies in Texas because beneficial use alternatives to land application are typically more expensive and can be environmentally problematic, especially when selecting landfill disposal as the likely alternative. The City of Dallas expressed that it has a vested interest in ensuring that the rules, as adopted, are protective of the environment but not unduly burdensome.

Response

The additional regulations will ensure that the beneficial use program in Texas will continue by putting more safeguards in place which will reassure the public that this program is protective of human health and the environment, without being unduly burdensome. The executive director does not anticipate that the proposed rules will result in substantial additional costs to cities, taxpayers or private entities. No change was made as a result of this comment.

Comment

The City of Fort Worth commented they would like different labels for the different types of sewage sludge than what is proposed. The City of Fort Worth believes only the

newly-created sludge classification should be assigned a new label. The City of Fort Worth suggests that the new classification for sewage sludge treated to the highest level should be designated as "Class AA" instead of "Class A" and that "Class AB" the next level of treatment should be designated as "Class A." In that way, sewage sludge currently classified as "Class A" will continue to be known as "Class A" and the newly-created classification for the most highly treated sludge will be known by the new classification of "Class AA."

The City of Fort Worth suggests that every place in the proposed rules refer to "Class AB sewage sludge" should be revised to "Class A sewage sludge" and every place that the proposed rules refer to "Class A sewage sludge" should be revised to "Class AA sewage sludge."

Renda Environmental requests that Class AB not be used in reference to the new rules pertaining to biosolids and proposes that the new sludge rules pertain to Class A biosolids and those processes that produce a product of perceived higher quality be referred to as Class AA.

Response

Although the new classification was originally titled Class AA, the name was changed to Class AB during the rulemaking process. This change was based

on comments made by stakeholders and the fact that Class AB sewage sludge combines most of the basic qualities of Class A sludge with the certain management practices of Class B. Therefore, the TCEQ will retain Class AB sewage sludge in the proposed rules. No change was made as a result of these comments.

Comment

The City of Fort Worth requests that at appropriate places throughout the rulemaking TCEQ change the term "sewage sludge" to "biosolids" to be consistent with prevailing water industry terminology. Because the United States Environmental Protection Agency recognizes a distinction between the two terms; "biosolids" refers to sewage sludge that has undergone treatment and meets federal and state standards for beneficial use, while "sewage sludge" refers to raw sewage sludge containing large amounts of pollutants, the City of Fort Worth requests that the Chapter 312 rules be revised to incorporate this distinction and to add a definition for the term "biosolids."

Response

This comment is beyond the scope of this rulemaking or jurisdiction of the commission. Further, the comments do not address water quality issues related to the proposed rules. No change was made as a result of this comment.

Comment

The City of Fort Worth requests that TCEQ revise the definition of "sewage sludge" to clarify that this term does not include grit or screenings removed during the preliminary treatment of domestic sewage at a treatment works.

Response

The TCEQ acknowledges the merit in the request to include "or grit and screenings" to the definition of sewage sludge in §312.8(74) and has therefore, made a change to the definition based on the comment provided.

Comment

The City of Fort Worth requests that TCEQ add a definition for the term "Best Management Practices" so that the regulated community will know what level of management standards will be considered adequate when proposing an Odor Control Plan.

Response

BMPs are those practices determined to be the most efficient, practical, and cost-effective measures identified to guide a particular activity or to address a particular problem. BMPs proposed within an Odor Control Plan should

be developed to address the source of the odors following an in-depth investigation of facility processes and consideration of various odor influencing factors unique to the site. The adequacy of the BMPs will vary between sites and ultimately be determined by their effectiveness at controlling odors.

Comment

The City of Fort Worth requests that §312.44(h)(1) be modified to eliminate subjective discretion in determining what constitutes "uniform application" of sewage sludge.

Response

The requested edits have the potential to undermine the purpose of this rule provision, which is to require uniform application of sewage sludge over the surface of the land, and not designing or implementing methods to achieve uniform land application. No change was made as a result of this comment.

Comment

Because the City of Fort Worth believes it is unfair or inequitable to charge sewage sludge operators with a nuisance odor violation merely because properly treated biosolids are impacted by uncontrollable natural events such as rainfall, the City of Fort

Worth requests that proposed §312.44(h)(3) be revised to include that the operator of a sewage sludge site shall be deemed in violation of its Adverse Weather and Alternative Plan or TCEQ rules prohibiting creation of nuisance odors to the extent any nuisance odors are caused or exacerbated by contact of precipitation with sewage sludge.

Response

The suggested edits are not feasible due to the subjectivity inherent in defining or determining the extent of causation or exacerbation. No change was made to the rule based on this comment.

Comment

The City of Fort Worth has expressed concern that because there is no definition of "nuisance odor" and because the definition of a nuisance can be highly subjective, the regulated community needs some type of objective standard for determining what constitutes a nuisance odor. The City of Fort Worth further commented that members of the regulated community already use the TCEQ's most convenient tool for determining the existence of a potential nuisance odor, the Odor Complaint Investigation Procedures ("OCIP") guidance document dated September 18, 2007. This guidance document, and the FIDO criteria incorporated in it, are already familiar to most members of the regulated community and so reference to it in the rules would provide more regulatory certainty considering nuisance odors in the rules. The City of Fort Worth recommends

adding language to §312.44(j)(3) that would allow the TCEQ to utilize the OCIP guidance document or subsequent revision of such guidance document when determining whether a nuisance odor condition exists.

Response

Nuisance odor is currently and will continue to be regulated under 30 TAC §101.4. TCEQ's Field Operations Division determines the methodology for assessing compliance with this regulation across agency programs. No change was made as a result of this comment.

Comment

The City of Fort Worth requests that §312.44(j)(4), with regards to the requirement to submit an Odor Control Plan, be revised to set forth the seven elements mentioned in the rule preamble. These elements include identifying odor sources, evaluating the processing of the sludge source, implementing corrective action measures, implementing BMPs, identifying milestones and deadlines of submittals, obtaining professional engineering certification, and submitting progress reports and a final report.

Response

The seven measures listed in the preamble were listed solely for the purpose of illustrating what an Odor Control Plan may contain and were

not intended to be a comprehensive list of possible odor prevention measures. Each Odor Control Plan will be formulated on a case-by-case basis according to the variables or characteristics of the land application site in question, and would not necessarily be limited to only these measures. No change was made as a result of this comment.

Comment

The City of Fort Worth has expressed concern about the requirements for Vector Attraction Reduction, specifically Alternative No. 6 as described in §312.83(b)(6). TCEQ's informal policy is that the sewage sludge must remain at the accumulation pad site at the WWTP for a minimum of 24 hours before it may be allowed to be transported off-site for land application. The City of Fort Worth explains that, based on their experience and studies, this TCEQ policy results in substantially increased odor problems as compared to a policy that would allow up to 22 hours of the 24-hour "waiting period" to be accomplished off-site, i.e., while the sewage sludge is being transported to or staged for land application. Requiring sewage sludge to remain at the pad site unnecessarily gives the sewage sludge more time to undergo the biological reactions that cause odor problems. Once the pH drops below 11.5 following the 24-hour period, odor problems become significantly more noticeable. The City of Fort Worth requests that §312.83(b)(6) include a statement that sewage sludge may be transported and staged during the 22-hour holding period prior to land application.

Response

Currently, the TCEQ rules do not prohibit the transportation to or staging at a sewage sludge land application site prior to achieving the time and pH requirements as stated in §312.83(b)(6). However, sewage sludge that is treated by using this vector attraction reduction method cannot be land applied until all of the requirements under this rule are met. TCEQ has chosen not to add the additional language requested by the City of Fort Worth. No change was made as a result of this comment.

Comment

The City of Fort Worth commented that §312.82(a)(1)(B) as printed in the *Texas Register* appears to have an inadvertent typo. The City recommends removing the word "or" from subsection (a)(1)(B).

Response

The TCEQ has corrected the typo and has updated §312.82(a)(1)(B) based on the comment provided.

Comment

Renda Environmental objects to the amount of time that the sign must be posted before land application can begin and that the rule limits the flexibility of a biosolids program in a negative way for all stakeholders. Renda Environmental is concerned that if there is a perceived change in the intensity or type of odor produced creating the need to change the land application site in order to mitigate potential odor complaints, this rule will prevent that needed change from happening. In this situation, biosolids will need to be either stored or continue with land application at that site hoping that the odor conditions of the sludge will improve. Another problematic situation that can occur would be rain event occurring at a site that forces the discontinued use of that site and the sign requirements prevent another site where there is no rain fall from being utilized because the sign was not posted three days prior. Renda Environmental believes that the rule should simply state that a sign will be posted on days that biosolids are being land applied.

The City of Fort Worth also stated that some planned application sites must be changed on very short notice due to changing wind and weather conditions, and resulting odor concerns. When those cases arise, it is not practically possible for an operator to post the required signage within the timeframe called for by the proposed rule. Therefore, the City of Fort Worth requests that proposed §312.44(l) be revised to allow for the required sign to be posted on the day on which sewage sludge land application commences in the event of unforeseen weather conditions.

Response

The purpose of the proposed rule language requiring a sign to be posted three days prior to commencement of land application is based on numerous stakeholder comments. Landowners that live adjacent to or near sewage sludge land application sites requested to be notified of land application activity occurring near their property. In addition, signage will include contact (operator) information, and the type of sewage sludge planned to be land applied. In the event of unforeseen circumstances such as weather conditions or equipment failure the TCEQ has included additional language to §312.44(l) that would allow for the sign to be posted on the day on which sewage sludge land application commences. Records of any deviation of the posting requirements and associated reasons shall be retained by the operator and be readily available for review by a TCEQ representative.

Comment

Renda Environmental proposes that an additional 90 days of storage be allowed at storage sites. Renda Environmental requests this change because during years of prolonged wet weather, and on sites that contain cultivated fields, where access by heavy equipment performing land application is very difficult, it is very likely that 180 days will

be surpassed. Renda Environmental also requests that the rule be changed to allow an additional 90 days of storage so that summer months can be used for application of stored biosolids that could not be land applied during the preceding wet winter. Renda Environmental commented that by allowing for additional 90 days of storage (270 days total), it will allow for land application and storage on sites located away from populated areas and to find larger farms that do not use the practice of cultivation.

Response

The current rule allows for storage of sewage sludge for up to 90 days with an additional 90 days of storage allowed with prior approval from the TCEQ regional office for reasons associated with application area flooding, saturated soils, or frozen soils. With proper planning, the current 180 days of storage should provide adequate time for stored material to be land applied. No change was made as a result of this comment.

Comment

Renda Environmental commented that the proposed rules involving coverage of trucks when transporting sewage sludge does not solve the problem that currently exists, as the spillage of biosolids is very uncommon. Furthermore, in the event of an accident where a truck was to turn over, a completely covered tarp would do little to prevent biosolids from spilling out of the truck.

Response

The TCEQ received numerous stakeholder comments and complaints about sewage sludge being inadvertently deposited onto public roadways throughout the state. As this is a current requirement for Class B sewage sludge that is transported to and from permitted land application sites, the TCEQ feels that it is important to require the same practice for Class A and AB bulk sewage sludge. In the unfortunate event that an accident were to happen and a truck were to turn over, the party responsible for transporting the sewage sludge must take immediate steps to collect and properly dispose of the material.

Comment

Renda Environmental strongly opposes the removal of the word "objectionable" from §312.44(j)(3)(B), and with the wording of "all odors" being used, there is no limit to what can be used against land appliers or facilities. WEAT and TACWA have also expressed concerned that removing the word "objectionable" seems unreasonable for an agricultural operation and incongruent with TCEQ Odor Complaint Procedures ("FIDO"), which set forth a methodical approach to determine when an odor meets nuisance criteria. Renda Environmental along with WEAT and TACWA requests that the wording must be left to read "objectionable" or something similar to this in reference to

odors. WEAT and TACWA further recommend that the section and other sections using the term "nuisance" include language specifically tying the definition of nuisance odor to measurable criteria, such as the FIDO classification, or some other approach such as the "dilution-to-threshold" (D/T) odor measurement approach. WEAT and TACWA also have concerns regarding the proposed changes to §312.44(j)(4). WEAT and TACWA believe that the corrective action of an Odor Control Plan should only be required if triggered by exceeding a measureable threshold, such as exceeding the FIDO nuisance criteria or specified D/T and as drafted, the rules remove language regarding "significance" of an odor and are silent regarding nuisance conditions. The silence is problematic as utilities will have no way to address potential complaints regarding odor, other than to assume any complaint – or odor may drive the need to develop such a plan that would seem to be the precursor to onsite capital improvements. The City of Dallas and Synagro Technologies both support WEAT and TACWA's comments.

Response

During an odor complaint investigation, the TCEQ will assess the FIDO classification, in addition to other criteria such as physical effects experienced on-site, local meteorological data (estimates of wind speed, temperature, humidity, etc.), and additional concerns that may be documented on-site. FIDO provides a methodical approach for determining when an odor meets nuisance criteria and provides the process for TCEQ

staff to assess these types of complaints. Upon completion of an odor investigation, the information collected is reviewed to determine whether a nuisance condition is confirmed. Because the TCEQ odor complaint guidance uses the term "offensiveness," the TCEQ is adding the word "offensive" in §312.44(j)(3)(B) when describing odor conditions that are needed to be minimized through the incorporation of sewage sludge into the soil or by taking some other type of corrective action. If the TCEQ determines that odors are continuously offensive, this could possibly trigger an Odor Control Plan.

Comment

WEAT and TACWA recommend that the TCEQ include variance language in the rules that would allow a product to move from Class AB to Class A with sufficient demonstration that a product is stable and/or has low odors. A variance could be critical for certain sludge treatment processes that are currently on the market and that may be developed in the future. WEAT and TACWA are concerned that processes that create low odor products, but are deemed as Class AB only based on pathogen reduction – which does not necessarily correlate to odors, would be penalized. WEAT and TACWA recommend that the TCEQ provide a variance approach within the rule that allows for these products to meet the highest classification possible in the regulations. The variance approach, much like what is seen in 30 TAC §217.4 and §290.39, that allow for

site-specific and product –specific evaluation, would provide the executive director with flexibility after the rules are adopted. The City of Dallas and Synagro Technologies both support WEAT and TACWA's comments.

Response

TCEQ agrees that after a sufficient demonstration that a product is stable with respect to pathogens and has equivalent odor protection as described in §312.82(a)(1)(B), and the documentation of such is submitted in writing to the executive director, a variance may be granted on a case-by-case basis. In response to this comment, the following statement was added to the end of §312.82(a)(1)(B): "Sewage sludge that meets the requirements of 30 TAC §312.82(a)(1)(A) may be classified as 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."

Comment

WEAT and TACWA commented that several of the state's largest utilities are considering moving to processes that significantly reduce odor, but the capital costs to do so are expected to be $50 million to $150 million per utility. In addition to capital cost considerations, the relative costs of other management practices should be considered by

the TCEQ. WEAT and TACWA are concerned that a cost increase for land application may drive utilities to landfill solids rather than invest in new processes to continue beneficial reuse and consider this to be a step backward in for Texas farmers, for drought management, and for resource recovery in the state. WEAT and TACWA also believe the rules, as proposed, include unquantifiable risks that may challenge the continuation, or future, of a number of successful beneficial reuse programs.

Response

The TCEQ agrees with WEAT and TACWA's comment on cost of wholesale changing of the large WWTP sludge process method (changing from one method to a different method). The rules are not requiring WWTPs to change their processes in order to meet the proposed requirements, but instead envisioned that each facility that has odor problems examine their sludge treatment process to determine what is the cause of the odor. No change was made as a result of this comment.

SUBCHAPTER A: GENERAL PROVISIONS

§§312.4, 312.8, 312.10 - 312.13

Statutory Authority

These amendments are adopted under the Texas Water Code (TWC). Specifically, TWC, §5.013, which establishes the general jurisdiction of the commission while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the code and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; and TWC, §26.034, which gives the commission the authority to set standards to prevent the discharge of waste that is injurious to the public health.

These amendments are also adopted under TWC, §26.027, which authorizes the commission to issue permits for the discharge of waste or pollutants into or adjacent to water in the state and Texas Health and Safety Code, §361.121, which gives the

commission the authority to require a permit before a responsible person may apply Class B sludge on a land application unit.

The adopted amendments implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 26.011, and 26.027; and Texas Health and Safety Code, §361.121.

§312.4. Required Authorizations or Notifications.

(a) Permits. Except where in conflict with other chapters in this title, a permit shall be required before any storage, processing, incineration, or disposal of sewage sludge, except for storage allowed under this section, §312.50 of this title (relating to the Storage and Staging of Sludge at Beneficial Use Sites), §312.61(c) of this title (relating to Applicability), §312.147 of this title (relating to Temporary Storage), and §312.148 of this title (relating to Secondary Transportation of Waste). Any permit authorizing disposal of sewage sludge shall be in accordance with any applicable standards of Subchapter C of this chapter (relating to Surface Disposal) or §312.101 of this title (relating to Incineration). No permit will be required under this chapter if issued in accordance with other requirements of the commission, as specified in §312.5 of this title (relating to Relationship to Other Requirements).

(1) Effective September 1, 2003, a permit is required for the beneficial land application of Class B sewage sludge. All registrations for the land application of Class B sewage sludge will expire on or before August 31, 2003. A person holding a registration to land apply sewage sludge who submitted an administratively complete permit application on or before September 1, 2002, may continue operations under the existing registration until final commission action on the permit application. For registrations that also authorize the use of Class A, sewage sludge, domestic septage, or water treatment plant sludge, only the provisions for the use of Class B sewage sludge will expire on August 31, 2003; the other provisions will expire on the expiration date of the registration or when a permit authorizing the use of Class A sewage sludge, domestic septage, or water treatment plant sludge is issued for the site.

(2) The effective date of a permit is the date that the executive director signs the permit.

(3) Site permit information on file with the commission must be confirmed or updated, in writing, whenever the mailing address and/or telephone number of the owner or operator is changed, or whenever requested by the commission.

(4) If a permit is required under this chapter, all activities at the site under this chapter, except transportation, shall be incorporated in the permit.

(5) The commission may not issue a Class B sewage sludge permit for a land application unit that is located both in a county that borders the Gulf of Mexico and within 500 feet of any water well or surface water.

(b) Notification of certain Class A or Class AB sewage sludge land application activities.

(1) If sewage sludge meets the metal concentration limits in Table 3 of §312.43(b)(3) of this title (relating to Metal Limits), the Class A or Class AB pathogen reduction requirements in §312.82(a) of this title (relating to Pathogen Reduction), and one of the requirements in §312.83(b)(1) - (8) of this title (relating to Vector Attraction Reduction), it will not be subject to the requirements of §312.10 of this title (relating to Permit and Registration Applications Processing), §312.11 of this title (relating to Permits), §312.12 of this title (relating to Registrations), and §312.13 of this title (relating to Actions and Notice), except as provided in this subsection.

(2) Any generator in Texas or any person who first conveys sewage sludge from out of state into the State of Texas and who proposes to store, land apply, or market and distribute sewage sludge meeting the standards of this subsection shall submit notification to the executive director, at least 30 days prior to engaging in such activities for the first time on a form approved by the executive director. A completed notification

form shall be submitted to the Water Quality Division by certified mail, return receipt requested. The notification must contain information detailing:

(A) sewage sludge classification, all points of generation, and wastewater treatment facility identification;

(B) name, address, telephone number, and the longitude and latitude of the site for all persons who are being proposed to receive the sewage sludge directly from the generator;

(C) a description in a marketing and distribution plan that describes any of the following activities:

(i) to sell or give away sewage sludge directly to the public, including a general description of the types of end uses proposed by persons who will be receiving the sewage sludge;

(ii) methods of distribution, marketing, handling, and transportation of the sewage sludge;

(iii) a reasonable estimate of the expected quantity of sewage sludge to be generated or handled by the person making the notification; and

(iv) a description of any proposed storage and the methods that will be employed to prevent surface water runoff of the sewage sludge or contamination of groundwater; and

(D) prior to land application, a map showing the buffer zone areas required under §312.44(c)(2)(D) and (E) of this title (relating to Management Practices) for all persons who are being proposed to receive the sewage sludge directly from the generator that meets one of the Class AB pathogen reduction requirements in §312.82(a)(2) of this title.

(3) Thirty days after the notification has occurred, the activities regulated by this subsection may commence unless the executive director determines that the activities do not meet the requirements of this subsection or an applicant's permit. After receiving a notification, the executive director may review a generator's activities or the activities of the person conveying the sewage sludge into Texas to determine whether any or all of the requirements of this chapter are necessary. In making this determination, the executive director will consider specific circumstances related to handling procedures, site conditions, or the application rate of the sewage sludge. The executive

director may review a proposal for storage of sewage sludge, considering the amount of time and the amount of material described on the notification. Also, in accordance with §312.41 of this title (relating to Applicability), any reasonably anticipated adverse effect that may occur due to a metal pollutant in the sewage sludge may also be considered.

(4) Annually, on September 1, each person subject to notification of certain Class A and Class AB sewage sludge activities required by this subsection shall provide a report to the commission, which shows in detail all activities described in paragraph (2) of this subsection that occurred in the reporting period. The report must include an update of new information since the prior report or notification was submitted and all newly proposed activities. The report must also include a description of the annual amounts of sewage sludge provided to each initial receiver from the in-state generator and for persons who convey out-of-state sewage sludge into Texas, the amounts provided from this person directly to any initial receivers and an updated list of persons receiving the sewage sludge. This report can be combined with the annual report(s) required under §312.48 of this title (relating to Reporting), §312.68 of this title (relating to Reporting), or §312.123 of this title (relating to Annual Report).

(c) Registration of land application sites.

(1) Effective September 1, 2003, registrations may only be obtained for the land application of Class A or Class AB sewage sludge that does not meet the requirements of subsection (b) of this section, water treatment plant sludge, and domestic septage.

(2) The effective date of the registration is the date that the executive director signs the registration in accordance with §312.12(d) of this title. Site registration information on file with the commission must be confirmed or updated, in writing, whenever the mailing address and/or telephone number of the owner or operator is changed, or requested by the executive director.

(d) Authorization. No person may cause, suffer, allow, or permit any activity of land application for beneficial use of sewage sludge unless such activity has received the prior written authorization of the commission.

§312.8. General Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise.

(1) 25-year, 24-hour rainfall event--The maximum rainfall event with a probable recurrence interval of once in 25 years, with a duration of 24 hours as defined by the National Weather Service in Technical Paper Number 40, Rainfall Frequency Atlas of the United States, May 1961, and subsequent amendments, or equivalent regional or state rainfall information developed from it.

(2) Active sludge unit--A sludge unit that has not closed and/or is still receiving sewage sludge.

(3) Aerobic digestion--The biochemical decomposition of organic matter in sewage sludge into carbon dioxide, water, and other by-products by microorganisms in the presence of free oxygen.

(4) Agricultural land--Land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

(5) Agricultural management unit--A portion of a land application area contained within an identifiable boundary, such as a river, fence, or road, where the area has a known crop or land use history.

(6) Agronomic rate--The whole sludge application rate (dry weight basis) designed:

(A) to provide the amount of nitrogen needed by the crop or vegetation grown on the land; and

(B) to minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the groundwater.

(7) Anaerobic digestion--The biochemical decomposition of organic matter in sewage sludge into methane gas, carbon dioxide, and other by-products by microorganisms in the absence of free oxygen.

(8) Annual metal loading rate--The maximum amount of a pollutant (dry weight basis) that can be applied to a unit area of land during a 365-day period.

(9) Annual whole sludge application rate--The maximum amount of sewage sludge that can be applied to a unit area of land during a 365-day period.

(10) Applied uniformly--Sewage sludge placed on the land for beneficial use such that the agronomic rate is not exceeded anywhere in the application area.

(11) Apply sewage sludge or sewage sludge applied to the land--Land application or the spraying/spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil.

(12) Aquifer--A geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding groundwater to wells or springs.

(13) Base flood--A flood that has a 1% chance of occurring in any given year.

(14) Beneficial use--Placement of sewage sludge onto land in a manner that complies with the requirements of Subchapter B of this chapter (relating to Land Application for Beneficial Use and Storage at Beneficial Use Sites), and does not exceed the agronomic need or rate for a cover crop, or any metal or toxic constituent limitations that the cover crop may have. Placement of sewage sludge on the land at a rate below the optimal agronomic rate will be considered a beneficial use.

(15) Bulk sewage sludge--Sewage sludge that is not sold or given away in a bag or other container for application to the land.

(16) Certified nutrient management specialist--An organization in Texas or an individual who is currently certified as a nutrient management specialist through a United States Department of Agriculture-Natural Resources Conservation Service recognized certification program.

(17) Class A sewage sludge--Sewage sludge meeting the pathogen reduction requirements in §312.82(a)(1)(B) of this title (relating to Pathogen Reduction).

(18) Class AB sewage sludge--Sewage sludge meeting the pathogen reduction requirements in §312.82(a)(1)(A) of this title (relating to Pathogen Reduction).

(19) Class B sewage sludge--Sewage sludge meeting one of the pathogen reduction requirements in §312.82(b) of this title (relating to Pathogen Reduction).

(20) Contaminate an aquifer--To introduce a substance that causes the maximum contaminant level for nitrate in 40 Code of Federal Regulations (CFR) §141.11, as amended, to be exceeded in groundwater or that causes the existing concentration of

nitrate in groundwater to increase when the existing concentration of nitrate in the groundwater already exceeds the maximum contaminate level for nitrate in 40 CFR §141.11, as amended.

(21) Cover--Soil or other material used to cover sewage sludge placed on an active sludge unit.

(22) Cover crop--Grasses or small grain crop, such as oats, wheat, or barley, not grown for harvest.

(23) Cumulative metal loading rate--The maximum amount of an inorganic pollutant (dry weight basis) that may be applied to a unit area of land.

(24) Density of microorganisms--The number of microorganisms per unit mass of total solids (dry weight basis) in the sewage sludge.

(25) Displacement--The relative movement of any two sides of a fault measured in any direction.

(26) Disposal--The placement of sewage sludge on the land for any purpose other than beneficial use. Disposal does not include placement onto the land where the

activity has been approved by the executive director or commission as storage or temporary storage and it occurs only for the period of time expressly approved.

(27) Domestic septage--Either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap.

(28) Domestic sewage--Waste and wastewater from humans or household operations that is discharged to a wastewater collection system or otherwise enters a treatment works.

(29) Dry weight basis--Calculated on the basis of having been dried at 105 degrees Celsius until reaching a constant mass (i.e., essentially 100% solids content).

(30) Experimental use--Non-routine beneficial use land application or reclamation projects where sewage sludge is added to the soil for research purposes, in pilot projects, feasibility studies, or similar projects.

(31) Facility--Includes all contiguous land, structures, other appurtenances, and improvements on the land used for the surface disposal, land application for beneficial use, or incineration of sewage sludge.

(32) Fault--A fracture or zone of fractures in any materials along which strata, rocks, or soils on one side are displaced with respect to strata, rocks, or soil on the other side.

(33) Feed crops--Crops produced primarily for consumption by domestic livestock, such as swine, goats, cattle, or poultry.

(34) Fiber crops--Crops such as flax and cotton.

(35) Final cover--The last layer of soil or other material placed on a sludge unit at closure.

(36) Floodway--A channel of a river or watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the surface elevation more than one foot.

(37) Food crops--Crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

(38) Forest--Land densely vegetated with trees and/or underbrush.

(39) Grit trap--A unit/chamber that allows for the sedimentation of solids from an influent liquid stream by reducing the flow velocity of the influent liquid stream. In a grit trap, the inlet and the outlet are both located at the same vertical level, at, or very near, the top of the unit/chamber; the outlet of the grit trap is connected to a sanitary sewer system. A grit trap is not designed to separate oil and water.

(40) Grit trap waste--Waste collected in a grit trap. Grit trap waste includes waste from grit traps placed in the drains prior to entering the sewer system at maintenance and repair shops, automobile service stations, car washes, laundries, and other similar establishments. The term does not include material collected in an oil/water separator or in any other similar waste management unit designed to collect oil.

(41) Groundwater--Water below the land surface in the saturated zone.

(42) Harvesting--Any act of cutting, picking, drying, baling, gathering, and/or removing vegetation from a field, or storing.

(43) Holocene time--The most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch to the present. Holocene time began approximately 10,000 years ago.

(44) Incorporation--Mixing the applied material evenly through the top three inches of soil.

(45) Industrial wastewater--Wastewater generated in a commercial or industrial process.

(46) Institution--An established organization or corporation, especially of a public nature or where the public has access, such as child care facilities, public buildings, or health care facilities.

(47) Land application--The spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

(48) Land with a high potential for public exposure--Land that the public uses frequently and/or is not provided with a means of restricting public access.

(49) Land with a low potential for public exposure--Land that the public uses infrequently and/or is provided with a means of restricting public access.

(50) Leachate collection system--A system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sludge unit.

(51) Licensed professional geoscientist--A geoscientist who maintains a current license through the Texas Board of Professional Geoscientists in accordance with its requirements for professional practice.

(52) Liner--Soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less. Soil liners must be of suitable material with more than 30% passing a number 200 sieve, have a liquid limit greater than 30%, a plasticity index greater than 15, compaction of greater than 95% Standard Proctor at optimum moisture content, and will be at least two feet thick placed in six-inch lifts. Synthetic liners must be a membrane with a minimum thickness of 20 mils and include an underdrain leak detection system.

(53) Lower explosive limit for methane gas--The lowest percentage of methane in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

(54) Major sole-source impairment zone--A watershed that contains a reservoir that is used by a municipality as a sole source of drinking water supply for a population of more than 140,000, inside and outside of its municipal boundaries; and into which at least half of the water flowing is from a source that, on September 1, 2001, is on the list of impaired state waters adopted by the commission as required by 33 United States Code, §1313(d), as amended, at least in part because of concerns regarding pathogens and phosphorus, and for which the commission at some time prepared and submitted a total maximum daily load standard.

(55) Metal limit--A numerical value that describes the amount of a metal allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of a pollutant that can be applied to a unit area of land (e.g., kilograms per hectare); or the volume of a material that can be applied to a unit area of land (e.g., gallons per acre).

(56) Monofill--A landfill or landfill trench in which sewage sludge is the only type of solid waste placed.

(57) Municipality--A city, town, county, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities) created by or under state law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under federal Clean Water Act, §208, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, or an integrated waste management facility as defined in federal Clean Water Act, §201(e), as amended, that has as one of its principal responsibilities the treatment, transport, use, or disposal of sewage sludge.

(58) Off-site--Property that cannot be characterized as "on-site."

(59) On-site--The same or contiguous property owned, controlled, or supervised by the same person. If the property is divided by public or private right-of-way, the access must be by crossing the right-of-way or the right-of-way must be under the control of the person.

(60) Operator--The person responsible for the overall operation of a facility or beneficial use site.

(61) Other container--Either an open or closed receptacle, including, but not limited to, a bucket, box, or a vehicle or trailer with a load capacity of one metric ton (2,200 pounds) or less.

(62) Owner--The person who owns a facility or part of a facility.

(63) Pasture--Land that animals feed directly on for feed crops such as legumes, grasses, grain stubble, forbs, or stover.

(64) Pathogenic organisms--Disease-causing organisms including, but not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

(65) Person who prepares sewage sludge--Either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

(66) Place sewage sludge or sewage sludge placed--Disposal of sewage sludge on a surface disposal site.

(67) Pollutant--An organic or inorganic substance, or a pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could, on the basis of information available to the executive director, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organisms or offspring of the organisms.

(68) Process or processing--For the purposes of this chapter, these terms shall have the same meaning as "treat" or "treatment."

(69) Public contact site--Land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and/or golf courses.

(70) Range land--Open land with indigenous vegetation.

(71) Reclamation site--Drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and\or construction sites.

(72) Runoff--Rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off of the land surface.

(73) Seismic impact zone--An area that has a 10% or greater probability that the horizontal ground level acceleration of the rock in the area exceeds 0.10 gravity once in 250 years.

(74) Sewage sludge--Solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in treatment works. Sewage sludge includes, but is not limited to, domestic septage, scum, or solids removed in primary, secondary, or advanced wastewater treatment processes; and material derived from sewage sludge. Sewage sludge does not include ash or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.

(75) Sewage sludge debris--Solid material such as rubber, plastic, glass, or other trash that may pass through a wastewater treatment process or sludge process or may be collected with septage. This solid material is visibly distinguishable from sewage sludge. This material does not include grit or screenings removed during the preliminary treatment of domestic sewage at a treatment works, nor does it include grit trap waste.

(76) Sludge lagoon--An existing surface impoundment located on site at a wastewater treatment plant for the storage of sewage sludge. Any other type impoundment must be considered an active sludge unit, as defined in this section.

(77) Sludge unit--Land that only sewage sludge is placed for disposal. A sludge unit must be used for sewage sludge. This does not include land that sewage sludge is either stored or treated.

(78) Sludge unit boundary--The outermost perimeter of a surface disposal site.

(79) Sole-source surface drinking water supply--A body of surface water that is identified as a public water supply in §307.10 of this title (relating to Appendices A - G) and is the sole source of supply of a public water supply system, exclusive of emergency water connections.

(80) Source-separated organic material--As defined in §332.2 of this title (relating to Definitions).

(81) Specific oxygen uptake rate--The mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in the sewage sludge.

(82) Staging--Temporary holding of sewage sludge at a beneficial use site, for up to a maximum of seven calendar days per each staging location, prior to the land application of the sewage sludge.

(83) Store or storage--The placement of sewage sludge on land for longer than seven days.

(84) Temporary storage--Storage of waste regulated under this chapter by a transporter, which has been approved in writing by the executive director, in accordance with §312.147 of this title (relating to Temporary Storage).

(85) Three hundred-sixty-five day period--A running total that covers the period between sludge application to a site and the nutrient uptake of the cover crop.

(86) Total solids--The materials in sewage sludge that remain as residue if the sewage sludge is dried at 103 degrees Celsius to 105 degrees Celsius.

(87) Transporter--Any person who collects, conveys, or transports sewage sludge, water treatment plant sludges, grit trap waste, grease trap waste, chemical toilet waste, and/or septage by roadway, ship, rail, or other means.

(88) Treat or treatment of sewage sludge--The preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

(89) Treatment works--Either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

(90) Unstabilized solids--Organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

(91) Unstable area--Land subject to natural or human induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land that the soils are subject to mass movement.

(92) Vector attraction--The characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

(93) Volatile solids--The amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess oxygen.

(94) Water treatment sludge--Sludge generated during the treatment of either surface water or groundwater for potable use, which is not an industrial solid waste as defined in §335.1 of this title (relating to Definitions).

(95) Wetlands--Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

§312.10. Permit and Registration Applications Processing.

(a) Applications for permits, registrations, or other types of approvals required by this subchapter shall be reviewed by staff for administrative completeness within 14 calendar days of receipt of the application by the executive director.

(b) Permit and registration applications must include all information required by §312.11 of this title (relating to Permits), §312.12 of this title (relating to Registrations), or §312.142 of this title (relating to Transporter Registration).

(c) Upon receipt of an application for a permit or registration, excluding transportation registrations, the executive director shall assign the application a number for identification purposes, and prepare a Notice of Receipt of Application and Declaration of Administrative Completeness for domestic septage registrations or Notice of Receipt of Application and Intent to Obtain Permit for permits where applicable, which is suitable for publishing or mailing, and forward that notice to the Office of the Chief Clerk. The Office of the Chief Clerk shall notify every person entitled to notification of a particular application as described in §312.13 of this title (relating to Actions and Notice).

(d) The Notice of Receipt of Application and Declaration of Administrative Completeness for domestic septage registrations or Notice of Receipt of Application and Intent to Obtain Permit for permit where applicable, must contain the information required by Chapter 39 of this title (relating to Public Notice), Texas Water Code, §5.552(c), and the approximate anticipated date of the first land application of sludge to the proposed land application unit.

(e) Nothing in this section shall be construed so as to waive the notice and processing requirements concerning the application and the draft permit in accordance with Chapter 39, Subchapters H and J of this title (relating to Applicability and General Provisions and Public Notice of Water Quality Applications and Water Quality Management Plans), Chapter 50, Subchapters E - G of this title (relating to Purpose, Applicability, and Definitions; Action by the Commission; and Action by the Executive Director), Chapter 55, Subchapters D - F of this title (relating to Applicability and Definitions; Public Comment and Public Meetings; and Requests for Reconsideration or Contested Case Hearing), or Chapter 305, Subchapters C, D, and F of this title (relating to Application for Permit or Post-Closure Order; Amendments, Renewals, Transfers, Corrections, Revocation, and Suspension of Permits; and Permit Characteristics and Conditions) for applications for sewage sludge land application, processing, disposal, storage, or incineration permits.

(f) All permit applications for sewage sludge land application, processing, disposal, storage, or incineration are subject to the application processing procedures and requirements in §§281.18 - 281.24 of this title (relating to Applications Returned; Technical Review; Extension; Draft Permit, Technical Summary, Fact Sheet, and Compliance History; Referral to Commission; Application Amendment; and Effect of Rules).

(g) All registration applications for Class A sewage sludge, Class AB sewage sludge, water treatment plant sludge, and domestic septage are subject to the application processing procedures and requirements in §§281.18 - 281.20 of this title.

(h) A registration or permit will be cancelled upon receipt of a written request for cancellation from either the site operator or landowner. The executive director will provide notice to the other party that cancellation has been requested and that cancellation will occur ten days from the issuance of notice. This notice is provided merely as a courtesy by the commission and is not mandatory for cancellation.

(i) To transfer a registration or permit, both the site operator and the landowner must sign the transfer application. An application for transfer that is not signed by both the site operator and the landowner will be considered a request for cancellation.

(j) If a registration or permit for a site is cancelled, a complete application for registration or permit must be submitted in order to reauthorize the site. If the application is approved, the site will be authorized under the same site registration or permit number.

(k) For permits, a major amendment is defined in Chapter 305, Subchapter D of this title. For purposes of this chapter concerning registrations and except as provided in

subsection (l) of this section, a major amendment for a registration is an amendment that changes a substantive term, provision, requirement, or a limiting parameter of a registration or a substantive change in the information provided in an application for registration. Changes to registrations that are not considered major include, but are not limited to, typographical errors, changes that result in more stringent monitoring requirements, changes in site ownership, changes in site operator, or similar administrative information.

(l) Upon the effective date of this chapter, the executive director will process as a minor amendment a request by an existing permittee or registrant to change any substantive term, provision, requirement, or a limiting parameter in a permit or registration that implemented prior regulations of the commission, when it is no longer a requirement of this chapter. Notice requirements of §312.13 of this title are not applicable to a minor amendment for a registration.

(m) Term limits for registrations or permits may not exceed five years.

§312.11. Permits.

(a) The provisions of this section set the standards and requirements for permit applications to land apply, process, store, dispose of, or incinerate sewage sludge. Any information provided under this subsection must be submitted in quadruplicate form.

(b) Any person who is required to obtain or who requests a new permit or an amendment, modification, or renewal of a permit under this section is subject to the permit application procedures of §1.5(d) of this title (relating to Records of the Agency), §305.42(a) of this title (relating to Application Required), §305.43 of this title (relating to Who Applies), §305.44 of this title (relating to Signatories to Applications), §305.45 of this title (relating to Contents of Application for Permit), and §305.47 of this title (relating to Retention of Application Data). For a land application permit, the applicant must be:

(1) the owner of the application site, if the sewage sludge was generated outside this state; or

(2) the site operator, if the sewage sludge was generated in this state.

(c) A permit application must include all information in accordance with Chapter 281, Subchapter A of this title (relating to Applications Processing) and Chapter 305,

Subchapter C of this title (relating to Application for Permit or Post-Closure Order), and must also include the following:

(1) the map required by §305.45(a)(6) of this title that provides the following information:

(A) the approximate boundaries of the site to be permitted, which must include all contiguous properties owned by or under the control of the applicant;

(B) the name and mailing address of the owner of each tract of land located:

(i) within 1/4 mile of the site to be permitted, as such information can be determined from the current county tax rolls at the time the application is filed, or other reliable sources, for Class B sewage sludge beneficial land use permit applications submitted on or after September 1, 2003, or applications submitted before September 1, 2003, but not administratively complete by the commission by that date;

(ii) within 1/2 mile of the site to be permitted, as such information can be determined from the current county tax rolls or other reliable sources, for a sewage sludge incineration or disposal permit application; and

(iii) adjacent to the site to be permitted, as such information can be determined from the current county tax rolls or other reliable sources, at the time the application is filed for a domestic septage Class B sewage sludge beneficial use land application, or sewage sludge processing or storage facility;

(C) the source(s) of the information for the surrounding property owners; and

(D) the list of property owners. The list must be provided both as a hard copy, either on the map or as an attached list, and in electronic format or on four sets of self-adhesive mailing labels; and

(2) a notarized affidavit from the applicant(s) verifying land ownership of the permitted site or landowner agreement to the proposed activity.

(d) A permit application for land application of Class B sewage sludge must also include the following information:

(1) the information listed in §312.12(b)(1)(A) - (C) of this title (relating to Registrations);

(2) analytical results establishing the background soil concentration of metals regulated by this chapter in the application area(s), based on the following:

(A) samples taken from the zero to six-inch zone of soil to be affected by the addition of sewage sludge (including domestic septage);

(B) soil samples that accurately show soil conditions in the application area(s) and that are taken at a spatial distribution of at least one composite sample per every 80 acres or less of soil type or area being sampled;

(C) composite samples comprised of ten to 15 samples taken from points randomly distributed across the entire soil type or area(s) being sampled;

(D) a separate composite sample taken from each United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil type (soils with the same characterization or texture), unless an alternate method is used; and

(E) when using an alternate method for defining areas to be sampled such as sampling by agricultural management units or other defined areas, a sampling plan included in the application, which sufficiently establishes background soil conditions through proportionate sampling of each USDA NRCS soil type in each area sampled;

(3) analytical results establishing the background soil concentration of nutrients, salinity, and pH in the application area(s), based on the following:

(A) separate samples taken from the zero to six-inch and from the six to 24-inch zones of soil to be affected by the addition of sewage sludge (including domestic septage);

(B) soil samples that accurately show soil conditions in the application area(s) and that are taken at a spatial distribution of at least one composite sample per every 80 acres or less of soil type or area being sampled;

(C) composite samples comprised of ten to 15 samples taken from points randomly distributed across the entire soil type or area(s) being sampled;

(D) a separate composite sample taken from each USDA NRCS soil type (soils with the same characterization or texture), unless an alternate method is used;

(E) when using an alternate method for defining areas to be sampled such as sampling by agricultural management units or other defined areas, a sampling plan also included in the application, which sufficiently establishes background soil conditions through proportionate sampling of each USDA NRCS soil type in each area sampled;

(4) information necessary to identify the hydrological characteristics of the surface water and groundwater within 1/4 mile of the site to be permitted;

(5) except for applications by political subdivisions, proof of a commercial liability insurance policy and an environmental impairment policy or a similar policy in accordance with Chapter 37, Subchapter V of this title (relating to Financial Assurance for Class B Sewage Sludge for Land Application Units); and

(6) proof that the applicant has minimized the risk of water quality impairment caused by nitrogen applied to the land application unit through the application of Class B sewage sludge by having had a nutrient management plan

prepared by a certified nutrient management specialist in accordance with the NRCS Practice Standard Code 590.

(e) A permittee of a Class B sewage sludge land application site shall comply with the requirements of Chapter 37, Subchapter V of this title.

(f) Any person who is issued a permit to land apply, process, store, dispose of, or incinerate sewage sludge is subject to the permit characteristics and standards set forth in §305.122 of this title (relating to Characteristics of Permits), §305.123 of this title (relating to Reservation in Granting Permit), §305.124 of this title (relating to Acceptance of Permit, Effect), §305.125 of this title (relating to Standard Permit Conditions), §305.126 of this title (relating to Additional Standard Permit Conditions for Waste Discharge Permits), §305.127 of this title (relating to Conditions to be Determined for Individual Permits), §305.128 of this title (relating to Signatories to Reports), and §305.129 of this title (relating to Variance Procedures).

(g) If any provision of a permit is violated during its term, the permit holder is required to report to the executive director the noncompliance in accordance with Texas Health and Safety Code, §361.121(d)(5) and §305.125(9) of this title. Each permit for the land application of sewage sludge must contain a provision requiring such reporting. Report of such information must be provided orally or by facsimile transmission (fax) to

the appropriate regional office within 24 hours of the permit holder becoming aware of the noncompliance. A written submission of such information must also be provided by the permit holder to the regional office and to the Enforcement Division at the commission's Central Office (Mail Code 224) within five working days of becoming aware of the noncompliance. The written submission must contain the following information:

(1) a description of the noncompliance and its cause;

(2) the potential danger to human health, safety, or the environment;

(3) the period of noncompliance, including exact dates and times;

(4) if the noncompliance has not been corrected, the anticipated time it is expected to continue; and

(5) steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

(h) Each sewage sludge land application permit must include a reference to the maximum quantity of sewage sludge that may be land applied under the permit.

(i) Any permittee who requests a new permit or an amendment, modification, or renewal of a permit to land apply, process, store, dispose of, or incinerate sewage sludge is subject to the standards and requirements for applications and actions concerning amendments, modifications, renewals, transfers, corrections, revocations, denials, and suspensions of permits, as set forth in §305.62 of this title (relating to Amendments), §305.63 of this title (relating to Renewal), §305.64 of this title (relating to Transfer of Permits), §305.65 of this title (relating to Renewal), §305.66 of this title (relating to Permit Denial, Suspension, and Revocation), §305.67 of this title (relating to Revocation and Suspension upon Request or Consent), and §305.68 of this title (relating to Action and Notice on Petition for Revocation or Suspension).

(j) The permittee shall immediately provide written notice to the executive director of any changes to a permit or to information on soil or subsurface conditions at the site, and provide any additional information concerning changes in land ownership, site control, operator, waste composition, source of sewage sludge, or waste management methods.

(k) For land application sites located in a major sole-source impairment zone, the permittee is subject to the following provisions.

(1) The operator shall have a nutrient management plan (nitrogen and phosphorus) prepared by a certified nutrient management specialist in accordance with the USDA NRCS Practice Standard Code 590;

(2) When results of the annual soil analysis for extractable phosphorus indicate a level greater than 200 parts per million of extractable phosphorus (reported as P) in the zero to six-inch sample for a particular land application field or if ordered by the commission in order to protect the quality of water in the state, then the operator may not apply any sewage sludge to the affected area unless the land application is implemented in accordance with a detailed nutrient utilization plan (NUP) that has been approved by the commission.

(3) A NUP is equivalent to the NRCS Nutrient Management Plan Practice Standard Code 590. The nutrient management plan, based on crop removal, must be developed and certified by one of the following individuals or entities:

(A) an employee of the NRCS;

(B) a nutrient management specialist certified by the NRCS;

(C) the Texas State Soil and Water Conservation Board;

(D) Texas Cooperative Extension;

(E) an agronomist or soil scientist on full-time staff at an accredited university located in the State of Texas;

(F) a professional agronomist certified by the American Society of Agronomy;

(G) a certified professional soil scientist certified by the Soil Science Society of America; or

(H) a licensed Texas geoscientist-soil scientist, after approval by the executive director based on a determination by the executive director that another person or entity identified in this paragraph cannot develop the plan in a timely manner.

(4) After a NUP is implemented, the operator shall land apply in accordance with the NUP until soil phosphorus is reduced below 200 parts per million in the zero to six-inch sample. Thereafter, the operator shall implement the requirements of the nutrient management plan.

(5) The buffer zones must be maintained according to the applicable requirements specified in §312.44(c) of this title (relating to Management Practices).

§312.12. Registrations.

(a) After August 31, 2003, all registrations for the beneficial use of Class B sewage sludge will be void. Registrations for the beneficial use of Class A sewage sludge, water treatment plant sludge, and/or domestic septage will remain valid until they expire, are renewed, are cancelled, or are revoked.

(b) Except as provided in §312.4(b) of this title (relating to Required Authorizations or Notifications), an applicant for a registration to land apply Class A sewage sludge, Class AB sewage sludge, water treatment sludge, and/or domestic septage shall:

(1) submit to the executive director an original, completed application form approved by the executive director, along with the appropriate number of copies of the registration application. Each applicant shall submit to the executive director such information as may reasonably be required to enable the executive director to determine whether such land application for beneficial use activities are compliant with the terms of this chapter. Such information may include, but is not limited to, the following:

(A) a description and composition of the material to be land applied;

(B) a description of all processes generating the material to be land applied at the site;

(C) information about the site and the planned management of the material to be land applied, including the name, address, and telephone number of any landowner or operator at the site and the following information:

(i) whether such material is managed on site and/or off site from its point of generation;

(ii) a description of each on-site land application beneficial use unit or tract, including the name, address, and telephone number of all landowners, or the same information from a landowner acting as a spokesperson(s) for all the landowners, so long as the spokesperson submits to the executive director a sworn statement allowing the spokesperson to act for other persons;

(iii) a listing of the types of material to be land applied managed in each unit or tract;

(iv) a detailed description of the beneficial use occurring at each unit or tract of land where application of Class A or Class AB sewage sludge, water treatment sludge, and/or domestic septage is proposed, including proposed waste management and crop production methods; and

(v) information regarding soil characteristics and subsurface conditions where the land application site will be located;

(D) the verified legal status of the applicant(s), as applicable;

(E) the notarized signature of each applicant, in accordance with §305.44 of this title (relating to Signatories to Applications);

(F) a notarized affidavit from the applicant(s) verifying land ownership or landowner agreement to the proposed activity;

(G) technical reports and supporting data required by the application;

(H) for applications for major amendments or new registrations, information concerning surrounding landowners, including the following, as applicable:

(i) a map depicting the approximate boundaries of the tract of land owned or under the control of the applicant and each residential or business address and owner of all the tracts of land bordering the perimeter of any portion of the site;

(ii) a list on or attached to the map of the names and addresses of the owners of such tracts of land as can be determined from the current county tax rolls at the time the application is filed, and other reliable sources. The list of property owners must be provided in both hard copy and either in electronic format or on four sets of self-adhesive mailing labels; and

(iii) the source of the information;

(I) analytical results establishing the background soil concentration of metals regulated by this chapter in the application area(s), as applicable, based on the following:

(i) samples taken from the zero to six-inch zone of soil to be affected by the addition of sewage sludge (including domestic septage);

(ii) soil samples that accurately show soil conditions in the application area(s) and that are taken at a spatial distribution of at least one composite sample per every 80 acres or less of soil type or area being sampled;

(iii) composite samples comprised of ten to 15 samples taken from points randomly distributed across the entire soil type or area(s) being sampled;

(iv) a separate composite sample taken from each United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) soil type (soils with the same characterization or texture), unless an alternate method is used;

(v) when using an alternate method for defining areas to be sampled such as sampling by agricultural management units or other defined areas, a sampling plan also included in the application, which sufficiently establishes background soil conditions through proportionate sampling of each USDA NRCS soil type in each area sampled;

(J) analytical results establishing the background soil concentration of nutrients, salinity, and pH in the application area(s), as applicable, based on the following:

(i) separate samples taken from the zero to six-inch and from the six to 24-inch zones of soil to be affected by the addition of sewage sludge (including domestic septage);

(ii) soil samples that accurately show soil conditions in the application area(s) and that are taken at a spatial distribution of at least one composite sample per every 80 acres or less of soil type or area being sampled;

(iii) composite samples comprised of ten to 15 samples taken from points randomly distributed across the entire soil type or area(s) being sampled;

(iv) a separate composite sample taken from each USDA NRCS soil type (soils with the same characterization or texture), unless an alternate method is used;

(v) when using an alternate method for defining areas to be sampled such as sampling by agricultural management units or other defined areas, a sampling plan also included in the application, which sufficiently establishes background soil conditions through proportionate sampling of each USDA NRCS soil type in each area sampled;

(K) any information provided under this paragraph submitted to the executive director in quadruplicate form;

(2) immediately provide written notice to the executive director of any changes, requests for an amendment, modification, or renewal of a registration, or any additional information concerning changes in land ownership, changes in site control, or operator, changes in waste composition, changes in the source of sewage sludge, or waste management methods, and information regarding soils and subsurface conditions where the operation is to be located. Any information provided under this paragraph must be submitted to the executive director in duplicate form.

(c) The executive director shall determine, after review of any application, whether to approve or deny an application in whole or in part, deny with prejudice, suspend the authority to conduct an activity for a specified period of time, or amend or modify the proposed activity requested by the applicant. The determination of the executive director shall include review and action on any new applications or changes, renewals, and requests for major amendment of any existing application. In consideration of such an application, the executive director shall consider all relevant requirements of this chapter and consider all information pertaining to those requirements received by the executive director regarding the application. The written

determination on any application, including any authorization granted, shall be mailed to the applicant upon the decision of the executive director.

(d) At the same time that the executive director's decision is mailed to the applicant, notice of this decision must also be mailed to all parties who submitted written information on the application, as described in §312.13(c)(2) and (3) of this title (relating to Actions and Notice).

(e) For registered land application sites located in a major sole-source impairment zone, the registrant must comply with the provisions listed in §312.11(k) of this title (relating to Permits).

§312.13. Actions and Notice.

(a) Applicability. This section sets forth the manner in which action will be taken on applications filed with the executive director for either a permit or a registration to land apply, store, process, dispose of, or incinerate sewage sludge.

(b) Permit actions.

(1) All permit applications are subject to the standards and requirements as set forth in Chapter 39, Subchapters H - J of this title (relating to Applicability and General Provisions; Public Notice of Solid Waste Applications; and Public Notice of Water Quality Applications and Water Quality Management Plans), Chapter 50, Subchapters E - G of this title (relating to Purpose, Applicability, and Definitions; Action by the Commission; and Action by the Executive Director), and Chapter 55, Subchapters D - F of this title (relating to Applicability and Definitions; Public Comment and Public Meetings; and Requests for Reconsideration or Contested Case Hearing).

(2) For disposal and incineration permit applications, notice must be provided to all owners of properties within 1/2 mile of the border of any portion of the tract of land where the permitted activities would occur. For beneficial use (excluding Class B sewage sludge), processing, and storage permit applications, notice must be provided to all owners of properties adjacent to any portion of the tract of land where the permitted activities will occur. The tract of land includes all contiguous properties under the ownership or control of the applicant.

(3) For Class B sewage sludge beneficial land use permit applications:

(A) notice must be provided under Chapter 39 of this title (relating to Public Notice) and under Texas Water Code, §5.552. The notice must also contain the

anticipated date of the first land application of sludge to the proposed land application unit. An applicant for a new permit, permit amendment, or permit renewal under Texas Health and Safety Code, §361.121(c), shall notify by registered or certified mail each owner of land located within 1/4 mile of the proposed land application unit who lives on that land; and

(B) an owner of the land located within 1/4 mile of the proposed land application unit who lives on the land is considered an "affected person" for purposes of Texas Water Code, §5.115, and Chapter 55 of this title (relating to Requests for Reconsideration and Contested Case Hearings; Public Comment). Individuals who do not own land within 1/4 mile of the proposed land application site are not excluded from being considered "affected persons" under §55.203 of this title (relating to Determination of Affected Person).

(c) Registration actions.

(1) The public notice requirements of this subsection apply to new applications for a registration, and to applications for major amendment of a registration. The requirements of this subsection do not apply to sites where only Class A or Class AB sewage sludge that has been authorized for marketing and distribution is to be land applied for beneficial use or registrations for water treatment sludge.

(2) The Office of the Chief Clerk shall mail the Notice of Receipt of Application and Declaration of Administrative Completeness along with a copy of the registration application to the county judge in the county where the proposed site is to be located.

(3) The Office of the Chief Clerk shall mail the Notice of Receipt of Application and Declaration of Administrative Completeness to the landowners named on the application map or supplemental map, or the sheet attached to the application map or supplemental map.

(4) Each notice must specify both the name, affiliation, address, and telephone number of the applicant and of the commission employee who may be reached to obtain more information about the application to register the site. The notice must specify that the registration application has been provided to the county judge and that it is available for review by interested parties.

(5) Any application for a registration is subject to the standards and requirements for actions concerning amendments, modifications, transfers, and renewals of registrations, as set forth in Chapter 50, Subchapter G of this title.

(d) Public comment on registrations. A person may provide the commission with written comments on any new or major amendment applications to register a site, where applicable. The executive director shall review any written comments when they are received within 30 days of mailing the notice. The written information received will be utilized by the executive director in determining what action to take on the application for registration in accordance with §312.12(c) of this title (relating to Registrations).

(e) Motion to overturn. The applicant, public interest counsel, or other person may file with the chief clerk a motion to overturn under §50.139 of this title (relating to Motion to Overturn Executive Director's Decision) to overturn the executive director's final approval or denial of an application.

SUBCHAPTER B: LAND APPLICATION FOR BENEFICIAL USE AND STORAGE AT BENEFICIAL USE SITES

§§312.41, 312.42, 312.44, 312.45, 312.47, 312.50

Statutory Authority

These amendments are adopted under the Texas Water Code (TWC). Specifically, TWC, §5.013, establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the code and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; and TWC, §26.034, which gives the commission the authority to set standards to prevent the discharge of waste that is injurious to the public health.

These amendments are also adopted under TWC, §26.027, which authorizes the TCEQ to issue permits for the discharge of waste or pollutants into or adjacent to water in the

state and Texas Health and Safety Code, §361.121, which gives the TCEQ the authority to require a permit before a responsible person may apply Class B sludge on a land application unit.

The adopted amendments implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 26.011, and 26.027; and Texas Health and Safety Code, §361.121.

§312.41. Applicability.

(a) Application to land. This subchapter applies to any person who prepares sewage sludge that is applied to the land, to any person who applies sewage sludge to the land, to sewage sludge applied to the land, and to the land on which sewage sludge is applied.

(b) Bulk sewage sludge.

(1) When bulk sewage sludge is applied to the land and meets the metal concentrations in Table 3 of §312.43(b)(3) of this title (relating to Metal Limits), the Class A sewage sludge pathogen requirements in §312.82(a)(3) of this title (relating to Pathogen Reduction), and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title (relating to Vector Attraction Reduction), then the

provisions of §312.42 of this title (relating to General Requirements) and §312.44 of this title (relating to Management Practices) do not apply with the exception of §312.44(a), (b), (h)(3), (j), and (m) of this title.

(A) When bulk sewage sludge that meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class AB pathogen requirements in §312.82(a)(2) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title, is applied to the land, then §312.44(a), (b), (c)(2)(D) and (E), (d), (h)(1), (3), (5) and (6), (j), (l), and (m) of this title will apply to the land application of sewage sludge.

(B) When bulk sewage sludge that meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class AB pathogen requirements in §312.82(a)(2) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) in addition to (9) or (10) of this title, then the requirements in subparagraph (A) of this paragraph do not apply with the exception of §312.44(a), (b), (h)(3), (j), and (m) of this title.

(2) The executive director may apply any or all of §312.42 and §312.44 of this title to the bulk sewage sludge described in this subsection on a case-by-case basis after determining that the general requirements or management practices are needed to

protect public health and the environment from any reasonably anticipated adverse effect that may occur from any metal in the bulk sewage sludge.

(c) General Requirements for Bulk Derived Materials.

(1) When derived material from sewage sludge is applied to the land and meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class A pathogen requirements in §312.82(a)(3) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title, then the provisions of §312.42 and §312.44 of this title do not apply with the exception of §312.44(a), (b), (h)(3), (j), and (m) of this title.

(A) When bulk sewage sludge that meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class AB pathogen requirements in §312.82(a)(2) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title is applied to the land, then §312.44(a), (b), (c)(2)(D) and (E), (d), (h)(1), (3), (5), and (6), (j), (l), and (m) of this title will apply to the land application of sewage sludge.

(B) When bulk sewage sludge that meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class AB pathogen requirements in

§312.82(a)(2) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) in addition to (9) or (10) of this title, is applied to the land, then the requirements in subsection (b)(1)(A) of this section do not apply with the exception of §312.44(a), (b), (h)(3), (j), and (m) of this title.

(2) The executive director may apply any or all of §312.42 and §312.44 of this title to the bulk material described in this subsection on a case-by-case basis after determining that the general requirements or management practices are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any metal in the bulk sewage sludge.

(d) Special Requirements for Certain Bulk Derived Materials. The requirements in this subchapter may not apply when a bulk material derived from sewage sludge is applied to the land; if the sewage sludge from which the bulk material is derived meets the metal concentrations in Table 3 of §312.43(b)(3) of this title the Class A or Class AB pathogen requirements in §312.82(a) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title. The executive director may apply any or all of §312.42 and §312.44 of this title to the bulk derived material on a case-by-case basis after determining that the general requirements or management practices are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any metal in the sewage sludge.

(e) Bagged sludge. Sewage sludge sold or given away in a bag or other container for application to the land. Section 312.42 and §312.44 of this title may not apply when sewage sludge is sold or given away in a bag or other container for application to the land if the sewage sludge sold or given away in a bag or other container for application to the land meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class A or Class AB pathogen requirements in §312.82(a) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title.

(f) Bagged derived materials. Section 312.42 and §312.44 of this title may not apply when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land if the derived material meets the metal concentrations in §312.43(b) of this title, the Class A or Class AB pathogen requirements in §312.82(a) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title.

(g) Bagged materials. The requirements in this subchapter may not apply when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land if the sewage sludge from which the material is derived meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class A or Class AB

pathogen requirements in §312.82(a) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title.

§312.42. General Requirements.

(a) No person shall apply sewage sludge, including domestic septage, to the land except in accordance with the requirements in this subchapter.

(b) No person shall apply sewage sludge that does not meet the metal concentrations in Table 3 of §312.43(b)(3) of this title (relating to Metal Limits) to land where any of the cumulative metal loading rates in Table 2 of §312.43(b)(2) of this title have been reached.

(c) No person shall apply domestic septage to agricultural land, forest, or a reclamation site during a 365-day period where the annual application rate in §312.43(c) of this title has been reached.

(d) The person who applies sewage sludge, including domestic septage, to the land shall obtain information needed to comply with the requirements in this subchapter.

(e) If a treatment works provides bulk sewage sludge to a person who applies the bulk sewage sludge to the land, the treatment works shall provide the person who applies the bulk sewage sludge to the land notice and necessary information to comply with the requirements in this subchapter.

(f) If a treatment works provides bulk sewage sludge to a person who prepares the bulk sewage sludge for application to the land, the treatment works shall provide the person who prepares the bulk sewage sludge for application to the land notice and necessary information to comply with the requirements in this subchapter.

(g) The person who applies bulk sewage sludge to the land shall provide the owner or lease-holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements in this subchapter.

(h) If a treatment works provides sewage sludge to a person who prepares the sewage sludge for sale or give away in a bag or other container for application to the land, the treatment works shall provide the person who prepares the sewage sludge for sale or give away in a bag or other container for application to the land notice and information to comply with the requirements in this subchapter.

(i) The applicant shall determine the concentration of regulated metals in accordance with §312.12(b)(1)(I) of this title (relating to Registrations) and demonstrate

to the satisfaction of the commission that the proposed cumulative metal loading will result in a non-toxic condition or reduce the toxicity of the existing soil.

§312.44. Management Practices.

(a) Land application of bulk sewage sludge 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) Bulk sewage sludge must not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other water in the state, except as provided in a permit issued under Chapter 305 of this title (relating to Consolidated Permits) or federal Clean Water Act, §404.

(c) When bulk sewage sludge that does not meet Class A pathogen requirements or domestic septage is applied to agricultural land, forest, or a reclamation site, buffer zones must be established for each application area as noted in this section unless otherwise specified by the commission.

(1) Surface water:

(A) 200-foot buffer zone, if the sludge is not incorporated; for land application sites located in a major sole-source impairment zone this buffer zone must maintain a vegetative cover; or

(B) 33-foot vegetative buffer zone, if the sludge is incorporated.

(2) Other buffer zones:

(A) 150 feet, private water supply well;

(B) 500 feet, public water supply well, intake, spring or similar source, public water supply treatment plant, or public water supply elevated or ground storage tank;

(C) 200 feet, solution channel, sinkhole, or other conduit to groundwater;

(D) 750 feet, established school, institution, business, or occupied residential structure;

(E) 50 feet, public right-of-way and property boundaries; and

(F) 10 feet, irrigation conveyance canal.

(d) Any of the buffers established in subsection (c)(2)(D) and (E) of this section may be reduced or eliminated if an agreement to that effect is signed by the owners of the established school, institution, business, occupied residential structure, or adjacent property and this documentation is provided to the executive director prior to issuance of a permit or registration. Reductions or elimination of buffer zones in an existing permit or registration by agreement of the affected landowner will be considered a minor amendment of the permit or registration.

(e) Bulk sewage sludge must be applied to agricultural land, forest, or a public contact site at a whole sludge application rate that is equal to or less than the agronomic rate for the agricultural land, forest, or public contact site on which the bulk sewage sludge is applied.

(f) Bulk sewage sludge must be applied to a reclamation site at a whole application rate that is equal to or less than the agronomic rate for the reclamation site on which the bulk sewage sludge is applied, unless otherwise specified by the commission. On a

case-by-case basis, a whole sludge application rate may exceed the agronomic rate for a specific time period.

(g) Groundwater protection measures.

(1) A seasonal high groundwater table must be not less than three feet below the treatment zone for soils with moderate or slower permeability (less than two inches per hour).

(2) A seasonal high groundwater table must be not less than four feet below the treatment zone for soils with moderately rapid or rapid permeability (greater than two inches per hour and less than 20 inches per hour).

(3) Seasonal generally refers to a groundwater table that may be perched on a less permeable soil or geologic unit and fluctuates with seasonal climatic variation or that occurs in a soil or geologic unit as a variation in saturation due to seasonal climatic conditions and is identified as such in a published soil survey report or similar document.

(4) Application of sludge to land having soils with greater permeability and with higher groundwater tables will be considered on a case-by-case basis, after

consideration of soil pH, metal loadings onto the soil, soil buffering capacity, or other protective measures to prevent groundwater contamination.

(h) Sludge must be applied by a method and under conditions that prevent runoff of sewage sludge beyond the active application area and protect the quality of the surface water and the soils in the unsaturated zone.

(1) Sludge must be applied uniformly over the surface of the land.

(2) Sludge may not be applied to areas where permeable surface soils are less than two feet thick. The executive director will consider sites with thinner permeable surface soils, on a case-by-case basis.

(3) Sewage sludge may not be applied during rainstorms or during periods in which surface soils are water-saturated, and when pooling of water is evident on the land application site. The operator of a TCEQ permitted or bulk sewage sludge site subject to the notification requirements in §312.4(b) of this title (relating to Required Authorizations or Notifications) who land applies sewage sludge on agricultural land shall submit an Adverse Weather and Alternative Plan. This plan shall detail procedures to address times when the sewage sludge 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.

(4) Sludge may not be applied to areas having topographical slopes in excess of 8.0%. On a case-by-case basis, the executive director will consider sites with steeper slopes when runoff controls are proposed and utilized, incorporation of sewage sludge into the soil occurs, or for certain reclamation projects.

(5) Where runoff of sludge from the active application area is evident, the operator shall cease further sludge application until the condition is corrected.

(6) Sewage sludge may not be applied under provisions of this section on land within a designated floodway.

(i) Either a label must be affixed to the bag or other container in which sewage sludge is sold or given away for application to the land or an information sheet must be provided to the person who receives sewage sludge sold or given away in another container for application to the land. The label or information sheet must contain the following information:

(1) the name and address of the person who prepared the sewage sludge for sale or given away in a bag or other container for application to the land;

(2) a statement that prohibits the application of the sewage sludge to the land except in accordance with the instructions on the label or information sheet; and

(3) the annual whole sludge application rate for the sewage sludge that does not cause the annual metal loading rates in Table 4 of §312.43(b)(4) of this title (relating to Metal Limits) to be exceeded.

(j) Nuisance controls.

(1) A land application site location must be selected and the site operated in a manner to prevent public health nuisances.

(2) Sewage sludge debris must be prevented from blowing or running off site boundaries or into surface waters.

(3) To prevent nuisance conditions from occurring, the operator shall:

(A) minimize dust migration from the site and access roadways;

(B) minimize offensive odors through incorporation of sewage sludge into the soil or by taking some other type of corrective action; and

(C) develop and implement best management practices (BMPs) to minimize off-site tracking of sewage sludge and sediment during the transport of sewage sludge material to and from the land application site or storage area; and to include at a minimum, removing tracked material, to the extent practicable, by the end of each day of operation at the site and either returning it to the site or otherwise disposing of it properly. The documented BMPs shall be retained by the operator and made ~~by~~ readily available for review by a TCEQ representative .

(4) Odor Control . Pursuant to the authority vested in the commission or executive director in §312.6 of this title (relating to Additional or More Stringent Requirements), a person who prepares sewage sludge or land applies sewage sludge on agricultural land may be subject to an Odor Control Plan on a case-by-case basis.

(k) A permit or registration must specify the soil testing requirements for each application area.

(1) The testing frequency must take into account common agricultural methods of determining cover crop nutrient needs, soil pH, phytotoxicity, and concentrations of metals regulated by this chapter.

(2) No authorization may require soil testing of metals regulated by this chapter, at a frequency greater than once per five years or prior to submittal of a renewal application for a beneficial use site. Soil testing for metals regulated by this chapter may not be required for portions of the authorized site where sewage sludge has not been applied since the last soil metals testing was performed.

(3) Paragraph (2) of this subsection does not apply if the executive director becomes aware of circumstances warranting increased monitoring of metals regulated by this chapter, in order to address sites where metal loading into the soil is a threat to human health or environmental quality.

(l) An operator of a Class AB or Class B sewage sludge site shall post a sign that is visible from a publically accessible road or sidewalk that is adjacent to the premises on which the land application unit is located stating that a sewage sludge beneficial land 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. If signs are posted less than three days prior to land application, records shall be maintained documenting the unforeseeable circumstance

that necessitated the change in a planned land application site. Such records shall be retained by the operator and be readily available for review by a TCEQ representative. 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.

(m) All vehicles and equipment used for the transport of bulk Class A, Class AB or Class B sewage sludge for land application or disposal shall be constructed, operated, and maintained to prevent the loss of liquid or solid materials during transport. An operator of a Class A, Class AB or Class B bulk sewage sludge site may not accept bulk sewage sludge, unless the sludge is transported to the land application unit in a covered container with the covering firmly secured at the front and back.

§312.45. Operational Standards--Pathogens and Vector Attraction.

(a) Pathogens.

(1) The Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title (relating to Pathogen Reduction) or Class B sewage sludge pathogen requirements in §312.82(b) of this title shall be met if bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

(2) The Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title shall be met if bulk sewage sludge is applied to a lawn or a home garden.

(3) The Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title shall be met if sewage sludge is sold or given away in a bag or other container for application to the land.

(4) The requirements in §312.82(c) of this title shall be met if domestic septage is applied to agricultural land, forest, or a reclamation site.

(b) Vector attraction reduction.

(1) One of the vector attraction reduction requirements in §312.83(b)(1) - (10) of this title (relating to Vector Attraction Reduction) shall be met if bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

(2) One of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title shall be met if bulk sewage sludge is applied to a lawn or a home garden.

(3) One of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title shall be met if sewage sludge is sold or given away in a bag or other container for application to the land.

(4) The vector attraction reduction requirements in §312.83(b)(12) of this title shall be met if domestic septage is applied to agricultural land, forest, or a public contact site.

§312.47. Record Keeping.

(a) Sewage sludge.

(1) The person who prepares the sewage sludge in §312.41(b)(1) or (e) of this title (relating to Applicability) shall develop the following information and shall retain the information for five years:

(A) the concentration of each metal listed in Table 3 of §312.43(b)(3) of this title (relating to Metal Limits) in the sewage sludge;

(B) the following certification statement: "I certify, under penalty of law, that the Class A (or insert Class AB) sewage sludge pathogen requirements in 30

TAC §312.82(a) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in 30 TAC §312.83(b)(1) - (8)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment" ;

(C) a description of how the Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title (relating to Pathogen Reduction) are met; and

(D) a description of how one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title (relating to Vector Attraction Reduction) is met.

(2) The person who derives the material in §312.41(c)(1) or (f) of this title shall develop the following information and shall retain the information for five years:

(A) the concentration of each metal listed in Table 3 of §312.43(b)(3) of this title in the material;

(B) the following certification statement: "I certify, under penalty of law, that the Class A (or insert Class AB) sewage sludge pathogen requirements in 30 TAC §312.82(a) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in 30 TAC §312.83(b)(1) - (8)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements and the vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment";

(C) a description of how the Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title are met; and

(D) a description of how one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title is met.

(3) If the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title, and the vector attraction reduction requirements in either §312.83(b)(9) or (10) of this title

are met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site:

(A) The person who prepares the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(i) the concentration of each metal listed in Table 3 of §312.43(b)(3) of this title in the bulk sewage sludge;

(ii) the following certification statement: "I certify, under penalty of law, that the pathogen requirements in 30 TAC §312.82(a) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."; and

(iii) a description of how the pathogen requirements in §312.82(a) of this title are met.

(B) The person who applies the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(i) the following certification statement: "I certify, under penalty of law, that the management practices in 30 TAC §312.44 and the vector attraction reduction requirement in (insert either 30 TAC §312.83(b)(9) or (10)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including fine and imprisonment";

(ii) a description of how §312.44 of this title (relating to Management Practices) are met for each site on which bulk sewage sludge is applied; and

(iii) a description of how the vector attraction reduction requirements in either §312.83(b)(9) or (10) of this title are met for each site on which bulk sewage sludge is applied.

(4) If the metal concentrations in Table 3 of §312.43(b)(3) of this title and the Class B pathogen requirements in §312.82(b) of this title are met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site:

(A) The person who prepares the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(i) the concentration of each metal listed in Table 3 of §312.43(b)(3) of this title in the bulk sewage sludge;

(ii) the following certification statement: "I certify under, penalty of law, that the Class B sewage sludge pathogen requirements in 30 TAC §312.82(b) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in 30 TAC §312.83(b)(1) - (8) if one of those requirements is met) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment";

(iii) a description of how the Class B sewage sludge pathogen requirements in §312.82(b) of this title are met; and

(iv) when one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title is met, a description of how the vector attraction reduction requirement is met.

(B) The person who applies the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(i) the following certification statement: "I certify, under penalty of law, that the management practices in 30 TAC §312.44, the site restrictions in 30 TAC §312.82(b)(3), and the vector attraction reduction requirements in (insert either 30 TAC §312.83(b)(9) or (10), if one of those requirements is met) have been met for each site on which bulk sewage sludge is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices and site restrictions (and the vector attraction reduction requirements if applicable) have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment";

(ii) a description of how §312.44 of this title are met for each site on which bulk sewage sludge is applied;

(iii) a description of how the site restrictions in §312.82(b)(3) of this title are met for each site on which bulk sewage sludge is applied; and

(iv) when the vector attraction reduction requirement in either §312.83(b)(9) or (10) of this title is met, a description of how the vector attraction reduction requirement is met.

(5) If the requirements in §312.43(a)(2)(A) of this title are met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site:

(A) The person who prepares the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(i) the concentration of each metal listed in Table 1 of §312.43(b)(1) of this title in the bulk sewage sludge;

(ii) the following certification statement: "I certify, under penalty of law, that the pathogen requirements in (insert either 30 TAC §312.82(a) or (b)) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in 30 TAC §312.83(b)(1) - (8) if one of those

requirements is met) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment";

(iii) a description of how the pathogen requirements in either §312.82(a) or (b) of this title are met;

(iv) when one of the vector attraction requirements in §312.83(b)(1) - (8) of this title is met, a description of how the vector attraction requirement is met.

(B) The person who applies the bulk sewage sludge shall develop the following information, retain the information in clauses (i) - (vii) of this subparagraph indefinitely, and retain the information in clause (viii) - (xiii) of this subparagraph , for five years:

(i) the location, by either street address or latitude and longitude, of each site on which bulk sewage sludge is applied;

(ii) the number of acres in each site on which bulk sewage sludge is applied;

(iii) the date and time bulk sewage sludge is applied to each site;

(iv) the cumulative amount of each metal (i.e., kilograms) listed in Table 2 of §312.43(b)(2) of this title in the bulk sewage sludge applied to each site, including the amount in §312.42(e) of this title (relating to General Requirements);

(v) the amount of sewage sludge (i.e., metric tons) applied to each site;

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

(vii) a description of how the requirements to obtain information in §312.42(e) of this title are met;

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

(ix) a description of how §312.44 of this title are met for each site on which bulk sewage sludge is applied;

(x) the following certification statement when the bulk sewage sludge meets the Class B pathogen requirements in §312.82(b) of this title: "I certify, under penalty of law, that the site restrictions in 30 TAC §312.82(b)(3) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the site restrictions have been met. I

am aware that there are significant penalties for false certification including fine and imprisonment";

(xi) a description of how the site restrictions in §312.82(b)(3) of this title are met for each site on which Class B bulk sewage sludge is applied;

(xii) the following certification statement when the vector attraction reduction requirement in either §312.83(b)(9) or (10) of this title is met: "I certify, under penalty of law, that the vector attraction reduction requirement in (insert either 30 TAC §312.83(b)(9) or (10)) has been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the vector attraction reduction requirement has been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment"; and

(xiii) if the vector attraction reduction requirements in either §312.83(b)(9) or (10) of this title are met, a description of how the requirements are met.

(6) If the requirements in §312.43(a)(4)(B) of this title are met when sewage sludge is sold or given away in a bag or other container for application to the

land, the person who prepares the sewage sludge that is sold or given away in a bag or other container shall develop the following information and shall retain the information for five years:

(A) the annual whole sludge application rate for the sewage sludge that does not cause the annual metal loading rates in Table 4 of §312.43(b)(4) of this title to be exceeded;

(B) the concentration of each metal listed in Table 4 of §312.43(b)(4) of this title in the sewage sludge;

(C) the following certification statement: "I certify, under penalty of law, that the management practice in 30 TAC §312.44(e), the Class A (or insert Class AB) sewage sludge pathogen requirement in 30 TAC §312.82(a), and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in §312.83(b)(1) - (8)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practice, pathogen requirements, and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment";

(D) a description of how the Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title are met;

(E) a description of how one of the vector attraction requirements in §312.83(b)(1) - (8) of this title is met.

(b) Domestic septage. When domestic septage is applied to agricultural land, forest, or a reclamation site, the person who applies the domestic septage shall develop the following information and shall retain the information for five years:

(1) the location, by either street address or latitude and longitude, of each site on which domestic septage is applied;

(2) the number of acres in each site on which domestic septage is applied;

(3) the date and time domestic septage is applied to each site;

(4) the nitrogen requirement for the crop or vegetation grown on each site during a 365-day period;

(5) the rate, in gallons per acre per 365-day period, at which domestic septage is applied to each site;

(6) The following certification statement: "I certify, under penalty of law, that the pathogen requirements in (insert either 30 TAC §312.82(c)(1) or (2)) and the vector attraction reduction requirements in (insert 30 TAC §312.83(b)(9), (10), or (12)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment";

(7) a description of how the pathogen requirements in either §312.82(c)(1) or (2) of this title are met;

(8) a description of how the vector attraction reduction requirements in §312.83(b)(9), (10), or (12) of this title are met.

§312.50. Storage and Staging of Sludge at Beneficial Use Sites.

(a) Except as provided in subsection (b) of this section, storage of sludge at a beneficial land application site must not exceed 90 days. Storage is allowed only when the following requirements are carried out.

(1) Written authorization must be obtained from the executive director prior to construction of the storage area.

(2) The storage area must be operated and maintained to prevent surface water runoff and to prevent a release to groundwater. Discharge of storm water or wastewater which has come into contact with sewage sludge is prohibited. The storage area shall be designed to collect such runoff. Any runoff collected during the storage of sewage sludge shall be disposed in a manner to prevent a release to groundwater.

(3) The storage area shall be designed, constructed, and operated in a manner which protects public health and the environment.

(4) The storage area must be lined to prevent a release to groundwater. Natural or artificial liners are required for leachate control. A natural liner or equivalent barrier of one foot of compacted clay with a permeability coefficient of 1×10^{-7} cm/sec or less must be provided. Various flexible synthetic membrane lining materials may be used in lieu of soil liners if prior written approval has been obtained from the executive

director. The registrant shall furnish certification by a licensed professional engineer or licensed professional geoscientist that the completed storage area lining meets the appropriate criteria described in this section prior to using the facilities. The certification shall be signed, sealed, and dated by a licensed professional engineer or licensed professional geoscientist.

(5) The application shall outline measures to be taken to minimize vectors and to avoid public health nuisances such as odors.

(6) The storage area shall be fenced or other methods shall be used, if necessary to control access by humans or domestic animals.

(7) Berms or dikes shall be constructed to contain the waste without leakage.

(8) Liquid sludge must be stored in an enclosed vessel.

(9) Processing of sludge is prohibited unless a permit is obtained from the commission.

(10) In the event a person who prepares sewage sludge that is applied to the land or who applies sewage sludge to the land, is subject to an Odor Control Plan as described in §312.44(j)(4) of this title (relating to Management Practices), that person must comply with the terms of the applicable Odor Control Plan in order to store sewage sludge at a beneficial use site.

(b) Up to an additional 90 days of storage will be allowed with the prior approval of the appropriate Texas Commission on Environmental Quality regional office, for reasons associated with application area flooding, saturated soils, or frozen soils.

(c) Staging of sewage sludge on-site, prior to land application, is allowable without executive director approval. Staging of sewage sludge may only occur for a maximum of seven calendar days per location within the beneficial land application site. Up to an additional 14 days of staging sewage sludge will be allowed with the prior approval of the appropriate Texas Commission on Environmental Quality regional office, for reasons associated with application area flooding, saturated soils, frozen soils, or equipment failure. Written records of the location of each staging area and timeframe in which sewage sludge was staged shall be retained by the operator and be readily available for review by a TCEQ representative. The operator shall stage the sewage sludge away from odor receptors in order to:

(1) prevent off-site dust migration from the staging area; and

(2) prevent nuisance odors.

SUBCHAPTER C: SURFACE DISPOSAL
§312.65

Statutory Authority

The amendment is adopted under the Texas Water Code (TWC). Specifically, TWC, §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the code and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; and TWC, §26.034, which gives the commission the authority to set standards to prevent the discharge of waste that is injurious to the public health.

The amendment is also adopted under TWC, §26.027, which authorizes the commission to issue permits for the discharge of waste or pollutants into or adjacent to water in the state and Texas Health and Safety Code, §361.121, which gives the commission the authority to require a permit before a responsible person may apply Class B sludge on a land application unit.

The adopted amendment implements TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 26.011, and 26.027; and Texas Health and Safety Code, §361.121.

§312.65. Operational Standards--Pathogen and Vector Attraction.

(a) Pathogen reduction. Sewage sludge (other than domestic septage). The Class A and Class AB sewage sludge pathogen reduction requirements in §312.82(a) of this title (relating to Pathogen Reduction) or the Class B sewage sludge pathogen reduction requirements in §312.82(b)(1)(A) and (2) of this title shall be met when sewage sludge is placed on an active sludge unit, unless the vector attraction reduction requirements in §312.83(b)(11) of this title (relating to Vector Attraction Reduction) is met.

(b) Pathogen reduction. Domestic septage. The pathogen reduction requirement in §312.82(c)(2) of this title shall be met when domestic septage is placed on an active sludge unit.

(c) Vector attraction reduction. Sewage sludge (other than domestic septage). One of the alternatives for vector attraction reduction in §312.83(b)(1) - (11) of this title shall be met when sewage sludge is placed on an active sludge unit.

(d) Vector attraction reduction. Domestic septage. The vector attraction reduction requirement in §312.83(b)(12) of this title shall be met when domestic septage is placed on an active sludge unit.

SUBCHAPTER D: PATHOGEN AND VECTOR ATTRACTION REDUCTION

§§312.81 - 312.83

Statutory Authority

These amendments are adopted under the Texas Water Code (TWC). Specifically, TWC, §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the code and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; and TWC, §26.034, which gives the commission the authority to set standards to prevent the discharge of waste that is injurious to the public health.

These amendments are also adopted under TWC, §26.027, which authorizes the commission to issue permits for the discharge of waste or pollutants into or adjacent to water in the state and Texas Health and Safety Code, §361.121, which gives the

commission the authority to require a permit before a responsible person may apply Class B sludge on a land application unit.

The adopted amendments implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 26.011, and 26.027; and Texas Health and Safety Code, §361.121.

§312.81. Scope.

(a) This subchapter contains the requirements that must be met for a sewage sludge to be classified either Class A, Class AB or Class B with respect to pathogen reduction.

(b) This subchapter contains the site restrictions for the land on which a sewage sludge that is Class B with respect to pathogens is either land applied for beneficial use or placed on an active sludge unit.

(c) This subchapter contains the pathogen reduction requirements for domestic septage applied to agricultural land, forest, or a reclamation site for beneficial use and the pathogen reduction requirements for domestic septage placed on an active sludge unit.

(d) This subchapter contains the site restrictions for the land on which domestic septage is applied for beneficial use or placed on an active sludge unit.

(e) This subchapter contains the vector attraction reduction requirements for sewage sludge and domestic septage land applied for beneficial use or placed on an active sludge unit.

§312.82. Pathogen Reduction.

(a) Sewage sludge--Class A and Class AB.

(1) Compliance requirements--Class A and Class AB.

(A) For sewage sludge to be classified as Class AB with respect to pathogens, the requirements in subparagraphs (C) and (D) of this paragraph and the requirements of one of the alternatives listed in paragraph (2) of this subsection must be met.

(B) For sewage sludge to be classified as Class A with respect to pathogens, the requirements in subparagraphs (C) and (D) of this paragraph and the requirements of one of the alternatives listed in paragraph (3) of this subsection

must be met. Sewage sludge that meets the requirements of subparagraph (A) of this paragraph 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.

(C) The requirements of the chosen alternative for pathogen reduction from paragraphs (2) and (3) of this subsection must be met prior to or at the same time as the vector attraction reduction requirements, except the requirements in §312.83(b)(6) - (8) of this title (relating to Vector Attraction Reduction).

(D) Either the density of fecal coliform in the sewage sludge must be less than 1,000 Most Probable Number per gram of total solids (dry weight basis) or the density of Salmonella (sp. bacteria) in the sewage sludge must be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed of, at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land, or at the time the sewage

sludge or material derived from sewage sludge is prepared to meet the requirements in §312.41(b), (c), (e), or (f) of this title (relating to Applicability).

(2) Compliance alternatives--Class AB.

(A) Alternative 2. The temperature and pH of the sewage sludge that is used or disposed of must be maintained at specific values for periods of time.

(i) The pH of the sewage sludge must be raised to above 12 and must remain above 12 for 72 hours.

(ii) The temperature of the sewage sludge must be above 52 degrees Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12.

(iii) At the end of the 72-hour period during which the pH of the sewage sludge is above 12, the sewage sludge must be air dried to achieve a percent solids in the sewage sludge greater than 50%.

(B) Alternative 3. The sewage sludge that is used or disposed of must be analyzed prior to pathogen treatment to determine whether the sewage sludge contains enteric viruses and viable helminth ova.

(i) When the density of enteric viruses in the sewage sludge prior to pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses until the next monitoring episode for the sewage sludge.

(ii) When the density of enteric viruses in the sewage sludge prior to pathogen treatment is equal to or greater than one Plaque-forming Unit per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses when the density of enteric viruses in the sewage sludge after pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the enteric virus density requirement are documented.

(iii) After the enteric virus reduction in clause (ii) of this subparagraph is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to enteric viruses when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in clause (ii) of this subparagraph.

(iv) When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is less than one per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova until the next monitoring episode for the sewage sludge.

(v) When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is equal to or greater than one per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova when the density of viable helminth ova in the sewage sludge after pathogen treatment is less than one per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the viable helminth ova density requirement are documented.

(vi) After the viable helminth ova reduction in clause (v) of this subparagraph is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to viable helminth ova when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in clause (v) of this subparagraph.

(C) Alternative 4. The sewage sludge that is used or disposed of must be analyzed prior to pathogen treatment to determine whether the sewage sludge contains enteric viruses and viable helminth ova.

(i) The density of enteric viruses in the sewage sludge must 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 of, at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land, or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §312.41(b), (c), (e), or (f) of this title.

(ii) The density of viable helminth ova in the sewage sludge must be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed of, at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land, or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §312.41(b), (c), (e), or (f) of this title.

(3) Compliance alternatives--Class A.

(A) Alternative 1. The temperature of the sewage sludge that is used or disposed of must be maintained at a specified value for a period of time.

(i) When the percent solids of the sewage sludge is 7.0% or higher, the temperature of the sewage sludge must be 50 degrees Celsius or higher; the time period must be 20 minutes or longer; and the temperature and time period must be determined using the equation in this clause, except when small particles of sewage sludge are heated by either warmed gases or an immiscible liquid.

Figure: 30 TAC §312.82(a)(3)(A)(i)

$$D > \frac{131{,}700{,}000}{10^{0.1400t}}$$

D = time in days

t = temperature in degrees Celsius

(ii) When the percent solids of the sewage sludge is 7.0% or higher and small particles of sewage sludge are heated by either warmed gases or an immiscible liquid, the temperature of the sewage sludge must be 50 degrees Celsius or higher, the time period must be 15 seconds or longer, and the temperature and time period must be determined using the equation in clause (i) of this subparagraph.

(iii) When the percent solids of the sewage sludge is less than 7.0% and the time period is at least 15 seconds, but less than 30 minutes, the

temperature and time period must be determined using the equation in clause (i) of this subparagraph.

(iv) When the percent solids of the sewage sludge is less than 7.0%; the temperature of the sewage sludge is 50 degrees Celsius or higher; and the time period is 30 minutes or longer, the temperature and time period must be determined using the equation in this clause.

Figure: 30 TAC §312.82(a)(3)(A)(iv)

$$D > \frac{50{,}070{,}000}{10^{0.1400t}}$$

D = time in days

t = temperature in degrees Celsius

(B) Alternative 5 (Processes to Further Reduce Pathogens (PFRP)). Sewage sludge that is used or disposed of must be treated in one of the PFRP described in 40 Code of Federal Regulations (CFR) Part 503, Appendix B.

(C) Alternative 6 (PFRP Equivalent). Sewage sludge that is used or disposed of must be treated in a process that has been approved by the United States Environmental Protection Agency (EPA) as being equivalent to those in subparagraph (B) of this paragraph.

(b) Sewage sludge--Class B.

(1) Compliance requirements--Class B.

(A) For a sewage sludge to be classified as Class B with respect to pathogens, the requirements in subparagraphs (B) and (C) of this paragraph must be met. As an alternative for a sewage sludge to be classified as Class B, the requirements of subparagraph (B) of this paragraph and paragraph (2) of this subsection must be met.

(B) The site restrictions in paragraph (3) of this subsection must be met when sewage sludge that is classified as Class B with respect to pathogens is applied to the land for beneficial use.

(C) A minimum of seven representative samples of the sewage sludge must be collected within 48 hours of the time that the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge. The geometric mean of the density of fecal coliform for the samples collected must be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis) or 2,000,000 Colony-forming Units per gram of total solids (dry weight basis).

(2) Processes to Significantly Reduce Pathogens (PSRP) compliance alternatives--Class B. Sewage sludge that is used or disposed of must be treated in one of the PSRP described in 40 CFR Part 503, Appendix B, or must be treated by an equivalent process approved by the EPA, so long as all of the following requirements are met by the generator of the sewage sludge.

(A) Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in subparagraph (F) of this paragraph.

(B) An independent Texas registered professional engineer must make a certification to the generator of a 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 that the design meets all the applicable standards specified in 40 CFR Part 503, Appendix B.

(C) 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 PSRP 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 recordkeeping requirements must be in accordance with established EPA final guidance.

(D) 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.

(E) In lieu of a generator obtaining a certification as specified in subparagraph (B) of this paragraph, the executive director will accept from the EPA a finding of equivalency to the defined PSRP.

(F) 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 meet the certification, operation, and recordkeeping requirements of this paragraph.

(3) Site restrictions.

(A) Food crops with harvested parts totally above the land surface that touch the sewage sludge/soil mixture must not be harvested from the land for at least 14 months after the application of sewage sludge.

(B) Food crops with harvested parts below the surface of the land must not be harvested for at least 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil.

(C) Food crops with harvested parts below the surface of the land must not be harvested for at least 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to the incorporation into the soil.

(D) Food crops, feed crops, and fiber crops must not be harvested for at least 30 days after application of sewage sludge.

(E) Animals must not be allowed to graze on the land for at least 30 days after application of sewage sludge.

(F) Turf grown on land where sewage sludge is applied may not be harvested for at least one year after application of sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

(G) Public access to land with a high potential for public exposure must be restricted for at least one year after application of sewage sludge.

(H) Public access to land with a low potential for public exposure must be restricted for at least 30 days after application of the sewage sludge.

(c) Domestic septage.

(1) The site restrictions in subsection (b)(3) of this section must be met if domestic septage is applied to agricultural land, forest, or a reclamation site.

(2) The pH of domestic septage applied to agricultural land, forest, or a reclamation site must be raised to 12 or higher by alkali addition and, without the addition of more alkali, must remain at 12 or higher for a period of 30 minutes.

§312.83. Vector Attraction Reduction.

(a) Compliance requirements.

(1) One of the vector attraction reduction requirements in subsection (b)(1) - (10) of this section shall be met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

(2) One of the vector attraction reduction requirements in subsection (b)(1) - (8) of this section shall be met when bulk sewage sludge is applied to a lawn, home garden, or is sold or given away in a bag or other container.

(3) One of the vector attraction reduction requirements in subsection (b)(1) - (11) of this section shall be met when sewage sludge (other than domestic septage) is placed on an active sewage sludge unit.

(4) One of the vector attraction reduction requirements in subsection (b)(9), (10), or (12) of this section shall be met when domestic septage is applied to agricultural land, forest, or a reclamation site.

(5) One of the vector attraction reduction requirements in subsection (b)(9) - (12) of this section shall be met when domestic septage is placed on an active sewage sludge unit.

(b) Compliance alternatives.

(1) The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

(2) If an anaerobically digested sewage sludge cannot meet the 38% volatile solids reduction requirement in paragraph (1) of this subsection, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in a laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. If at the end of the 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17%, vector attraction reduction is achieved.

(3) If an aerobically digested sewage sludge cannot meet the 38% volatile solids reduction requirement in paragraph (1) of this subsection, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2.0% or less aerobically in a laboratory in a bench-scale unit for 30 additional days at 20 degrees Celsius. If at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15%, vector attraction reduction is achieved.

(4) The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall 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.

(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 sewage sludge shall be higher than 45 degrees Celsius.

(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.

(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% based on the moisture content and total solids prior to mixing with other materials.

(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% based on the moisture content and total solids prior to mixing with other materials.

(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. If the sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, as described in §312.82 of this title (relating to Pathogen Reduction), the sewage sludge shall be injected below the land surface within eight hours after the sewage sludge is discharged from the pathogen treatment process.

(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 or placement on the land. If the sewage sludge that is incorporated into the soil is Class A or Class AB with respect to pathogens, as described in §312.82 of this title, the sewage sludge shall be applied to or placed on the land within eight hours after the sewage sludge is discharged from the pathogen treatment process.

(11) Sewage sludge placed on an active sewage sludge unit shall be covered with soil or other material at the end of each operating day.

(12) The pH of domestic septage shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 30 minutes.