

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



IN THE MATTER OF THE APPLICATION	§	BEFORE THE EXECUTIVE
OF THE TARRANT REGIONAL WATER	§	DIRECTOR OF THE TEXAS
DISTRICT FOR EAGLE MOUNTAIN LAKE	§	COMMISSION ON
FOR A TEXAS HEALTH AND SAFETY	§	ENVIRONMENTAL
CODE §366.031 ORDER	§	QUALITY

On April 8, 2011 the Executive Director of the Texas Commission on Environmental Quality ("Commission" or "TCEQ"), considered the application of the Tarrant Regional Water District for an Order pursuant to §366.031, Texas Health and Safety Code (THSC), and 30 Texas Administrative Code (TAC) §285.10 of the rules of the Commission.

No person has requested a public hearing on the application, therefore the Executive Director, on behalf of the Commission, is satisfied that the Tarrant Regional Water District has satisfied the requirements of §366.031, THSC. The Commission finds that the Tarrant Regional Water District Order should be approved.

## FINDINGS OF FACT

1. The Tarrant Regional Water District drafted a proposed Order which regulates on-site sewage facilities.
2. On September 30, 2010, the Tarrant Regional Water District caused notice to be published, in a newspaper regularly published and of general circulation, in the Tarrant Regional Water District's area of jurisdiction, of a public meeting to be held on October 6, 2010.
3. The Tarrant Regional Water District held a public meeting to discuss its proposed Order on October 6, 2010.
4. The Tarrant Regional Water District Order regulating on-site sewage facilities was adopted on December 21, 2010.
5. A certified copy of the minutes was submitted to the Texas Commission on Environmental Quality.
6. A certified copy of the Tarrant Regional Water District Order was submitted to the Commission.
7. The Order is at least equivalent to the standards of the Commission.

## CONCLUSIONS OF LAW

1. The Commission has jurisdiction to issue Orders designating local governmental entities as authorized agents. TEXAS WATER CODE ch. 5 and TEXAS HEALTH & SAFETY CODE ch. 366.
2. The Commission may delegate uncontested matters to the Executive Director provided the required notice was given, the applicant agrees to the action and the application is uncontested. TEXAS WATER CODE § 5.122.
3. Notice of the Tarrant Regional Water District's intent to adopt a new Tarrant Regional Water District Order was properly provided. TEXAS HEALTH & SAFETY CODE § 366.031 and TEXAS ADMINISTRATIVE CODE § 285.10.
4. The Tarrant Regional Water District agreed to the proposed Order in writing.
5. The proposed Order is uncontested.
6. The Tarrant Regional Water District's proposed Order incorporates the Commission's rules on abatement or prevention of pollution and prevention of injury to the public health; meets the Commission's minimum requirements for on-site sewage disposal systems. TEXAS HEALTH & SAFETY CODE § 366.032.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY THAT:

1. The Tarrant Regional Water District is hereby authorized to implement its new Tarrant Regional Water District Order regulating on-site sewage facilities.
2. Any amendments to the Tarrant Regional Water District Order must be approved by the Commission.
3. The Office of Chief Clerk of the Commission is directed to forward a copy of this Order and the Tarrant Regional Water District's adopted Order, marked as Exhibit "A," to the Tarrant Regional Water District and all other parties and to issue the Order and cause it to be recorded in the files of the Commission.

Issued this date: April 8, 2011



Executive Director  
Texas Commission on Environmental Quality

# EXHIBIT A

COUNTY OF TARRANT

§

STATE OF TEXAS

§

AFFIDAVIT

Before me, the undersigned authority, personally appeared who, being by me duly sworn, deposed as follows:

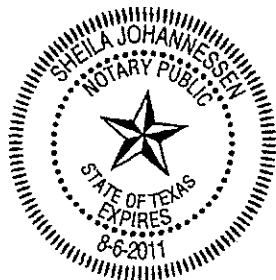
My name is Nancy King. I am of sound mind, capable of making this affidavit, and personally acquainted with the facts herein stated:

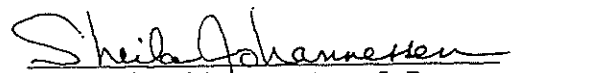
I am the custodian of the records for Tarrant Regional Water District, a Water Control and Improvement District. Attached hereto are nine (9) pages of records, five (5) pages of which are known as "Order Adopting Rules of Tarrant Regional Water District, A Water Control and Improvement District, for On-Site Sewage Facilities at Eagle Mountain Lake" and four (4) pages of which are known as "Tarrant Regional Water District Justification for More Stringent Requirements of On-Site Sewage Facilities at Eagle Mountain Lake". The records are kept by me as custodian of records for Tarrant Regional Water District, a Water Control and Improvement District, in the regular course of business with knowledge of the act, event, condition, opinion, or diagnosis, recorded to make the record or to transmit information thereof to be included in such record; and the record was made at or near the time or reasonably soon thereafter. The record attached hereto is the original or exact duplicate of the official record.

  
Nancy King

BEFORE ME, the undersigned authority, a Notary Public in and for said County, Texas, on this day personally appeared Nancy King, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledge to me that she executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this 04 day of January, 2011.  
(SEAL)



  
Notary/Public, State of Texas  
My commission expires: August 6, 2011

ORDER ADOPTING RULES OF  
TARRANT REGIONAL WATER DISTRICT,  
A WATER CONTROL AND IMPROVEMENT DISTRICT,  
FOR  
ON-SITE SEWAGE FACILITIES AT  
EAGLE MOUNTAIN LAKE

WHEREAS, the Texas Commission on Environmental Quality has established Rules for on-site sewage facilities to provide the citizens of this State with adequate public health protection and a minimum of environmental pollution; and

WHEREAS, the Legislature has enacted legislation, codified as Texas Health and Safety Code, Chapter 366, which authorizes a local government to regulate the use of on-site sewage facilities in its jurisdiction in order to abate or prevent pollution or injury to public health arising out of the use of on-site sewage facilities; and

WHEREAS, due notice was given of a meeting and public hearing to determine whether the Board of Directors of Tarrant Regional Water District ("District") should enact an order controlling or prohibiting the installation or use of on-site sewage facilities in the District's area of jurisdiction around Eagle Mountain Lake; and

WHEREAS, the District finds that the use of on-site sewage facilities in its area of jurisdiction around Eagle Mountain Lake is causing or may cause pollution, and is injuring or may injure the public health; and

WHEREAS, the District has considered the matter and deems it appropriate to enact an Order adopting Rules regulating on-site sewage facilities to abate or prevent pollution, or injury to public health in the District's area of jurisdiction around Eagle Mountain Lake.

NOW, THEREFORE, BE IT ORDERED BY THE BOARD OF DIRECTORS OF THE DISTRICT THAT:

SECTION 1. The matters and facts recited in the preamble hereof are hereby found and determined to be true and correct;

SECTION 2. The use of on-site sewage facilities in the District's area of jurisdiction around Eagle Mountain Lake is causing or may cause pollution or is injuring or may injure the public health;

SECTION 3. An Order for the District's area of jurisdiction around Eagle Mountain Lake be adopted entitled "On-Site Sewage Facilities", which shall read as follows: AN ORDER ENTITLED ON-SITE SEWAGE FACILITIES

SECTION 4. CONFLICTS.

This Order repeals and replaces any other On-site Sewage Facility order for the District.

## SECTION 5. CHAPTER 366.

The District clearly understands that there are technical criteria, legal requirements, and administrative procedures and duties associated with regulating on-site sewage facilities, and will fully enforce Chapter 366 of the Texas Health and Safety Code (H&SC) and Chapters 7 and 37 of the Texas Water Code (TWC), and associated rules referenced in Section 8 of this Order.

## SECTION 6. AREA OF JURISDICTION.

(A) The Rules shall apply to all the area lying below the 668.00 foot mean sea level ("msl") contour line surrounding Eagle Mountain Lake shall be referred to herein as the Eagle Mountain Lake Flood Pool. The area lying below the 649.10 foot msl contour line surrounding Eagle Mountain Lake shall be referred to herein as the Eagle Mountain Lake Conservation Pool. The area lying below the 657.35 foot msl contour line surrounding Eagle Mountain Lake shall be referred to herein as the Eagle Mountain Lake 100 Year Flood Plain. The rules described below shall apply to all the area lying within 2,000 linear feet of the Eagle Mountain Lake Conservation Pool, except for the area regulated under an existing Rule and the areas within incorporated cities. The area of jurisdiction shall be referred to herein as the District's Regulated Area.

(B) These Rules shall apply to those incorporated cities or towns that have executed intergovernmental contracts with the District.

## SECTION 7. ON-SITE SEWAGE FACILITY RULES.

Any permit issued for an on-site sewage facility within the jurisdictional area of the District around Eagle Mountain Lake must comply with the Rules adopted in Section 8 of this Order.

## SECTION 8. ON-SITE SEWAGE FACILITY RULES ADOPTED.

The Rules, Title 30 Texas Administrative Code (TAC) Chapter 30, Subchapters A and G, and Chapter 285, promulgated by the TCEQ for on-site sewage facilities are hereby adopted, and all officials and employees the District having duties under said Rules are authorized to perform such duties as are required of them under said Rules.

## SECTION 9. INCORPORATION BY REFERENCE.

The Rules, 30 TAC Chapters 30 and 285 and all future amendments and revisions thereto are incorporated by reference and are thus made a part of these Rules.

## SECTION 10. AMENDMENTS.

The District, wishing to adopt more stringent Rules for its On-Site Sewage Facility Order understands that the more stringent local Rule shall take precedence over the corresponding Texas Commission on Environmental Quality requirement. Listed below are the more stringent Rules adopted by the District:

(A) All OSSF installed within the District's Regulated Area must be designed by either a Registered Professional Sanitarian or Professional Engineer.

(B) All graywater generated by a residence or commercial enterprise within the District's Regulated Area must be discharged in an OSSF.

(C) All OSSF installed within the District's Regulated Area, regardless of tract size, must be approved and permitted by the District. This includes tracts larger than ten (10) acres.

(D) All tracts of land utilizing OSSF that are subdivided and/or platted within the District's area of jurisdiction surrounding Eagle Mountain Lake after the effective date of this Order must contain 1.0 acre if the property is to be served by a public water supply and must contain 2.0 acres if the property is to be served private water wells.

(E) All new OSSF utilizing surface irrigation for effluent disposal are prohibited after the effective date of this Order within the District's area of jurisdiction surrounding Eagle Mountain Lake. All existing surface irrigation systems permitted under prior waste control order rules will be allowed to remain in use, but are required to operate with a current maintenance contract in place at all times.

(F) Each OSSF that is operated with a maintenance contract in place in the District's regulated Area shall comply with the following:

- (i) The maintenance contract shall require quarterly maintenance, testing and reporting. In addition to the maintenance requirement in 30 TAC, Chapter 285 *et seq.*, the quarterly testing shall include tests for chlorine residual. The results of all maintenance and testing shall be provided to the District within two (2) weeks of the date of the maintenance and testing.

(G) All OSSF that produce effluent that is required to be disinfected shall comply with the following:

- (i) Each disinfection unit shall be equipped with an approved control system that is capable of shutting off the electrical power supply to the effluent pump or valving off the flow of effluent in the event that disinfection of effluent is interrupted or discontinued for any reason. This controller shall prohibit the reactivation of the electric power supply or opening of the valve until such time as the disinfection unit is fully operable and is functioning properly; and
- (ii) All chlorinators, filters, or other types of disinfecting units shall be commercially manufactured and shall be installed, serviced and operated in compliance with manufacturer's recommendations and requirements.

(H) No OSSF shall be allowed on islands within the Eagle Mountain Lake Flood Pool.

## SECTION 11. DUTIES AND POWERS.

The OSSF Inspectors for the District are herewith declared the Designated Representatives for the enforcement of these Rules within the District's area of jurisdiction. The OSSF Designated Representative (DR) (30 TAC § 285.2(17)) of the District, must be certified by the TCEQ before assuming the duties and responsibilities.

## SECTION 12. COLLECTION OF FEES.

All fees collected for permits and/or inspections shall be made payable to the District. A fee of \$10 will also be collected for each on-site sewage facility permit to be paid to the On-Site Wastewater Treatment Research Council as required by the THSC, Chapter 367.

## SECTION 13. APPEALS.

Persons aggrieved by an action or decision of the Designated Representative may appeal such action or decision to the Board of Directors for the District.

## SECTION 14. ENFORCEMENT PLAN

The District clearly understands that, at a minimum, it must follow the requirements in 30 TAC § 285.71 Authorized Agent Enforcement of OSSFs.

This Order adopts and incorporates all applicable provisions related to on-site sewage facilities, which includes, but is not limited to, those found in Chapters 341 and 366 of the THSC, Chapters 7, 26, and 37 of the TWC and 30 TAC Chapter 30, Subchapters A and G, and Chapter 285.

## SECTION 15. SEVERABILITY

It is hereby declared to be the intention of the Board of Directors of the District that the phrases, clauses, sentences, paragraphs, and sections of this Order are severable, and if any phrase, clause, sentence, paragraph, or section of this Order should be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, or sections of this Order, since the same would have been enacted by the Board of Directors of the District without incorporation in this Order of such unconstitutional phrases, clause, sentence, paragraph, or section.

## SECTION 16. RELINQUISHMENT OF ORDER

If the Board of Directors of the District decides that it no longer wishes to regulate on-site sewage facilities in its area of jurisdiction, the Commissioners Court, as the authorized agent, and the TCEQ shall follow the procedures outlined in 30 TAC § 285.10 (d) (1) through (4).



After relinquishing its OSSF authority, the authorized agent understands that it may be subject to charge-back fees in accordance with 30 TAC § 285.10 (d) (5) and §285.14 after the date that delegation has been relinquished.

SECTION 17. EFFECTIVE DATE.

This Order shall be in full force and effect from and after its date of approval as required by law and upon the approval of the Texas Commission on Environmental Quality.

AND IT IS SO ORDERED:

PASSED AND APPROVED THIS 21<sup>st</sup> DATE OF December, 2010.

(SEAL)

APPROVED:

Victor M. Henderson  
President, Board of Directors

ATTEST:

[Signature]  
Secretary, Board of Directors

**TARRANT REGIONAL WATER DISTRICT  
JUSTIFICATION FOR MORE STRINGENT REQUIREMENTS  
OF ON-SITE SEWAGE FACILITIES AT  
EAGLE MOUNTAIN LAKE**

SECTION 10. AMENDMENTS

The District, wishing to adopt more stringent Rules for its On-Site Sewage Facility Order, understands that the more stringent conflicting local Rule shall take precedence over the corresponding Texas Commission on Environmental Quality requirement. Listed below are the more stringent Rules adopted by the District:

(A) All OSSF installed within the District's Regulated Area must be designed by either a Registered Sanitarian or Professional Engineer.

*Because of the potential human health and water quality effects of contamination of the reservoir with effluent from OSSF, the design and installation of OSSF systems in the District's Regulated Area are required to be performed by qualified professionals.*

(B) All greywater generated by a residence or commercial enterprise within the District's Regulated Area, must be discharged in an OSSF.

*Because of the proximity of the District's Regulated Area to the reservoir, and the fact that the discharge of nutrients is a concern in addition to the discharge of pathogens, the discharge of greywater without treatment is prohibited. This requirement increases protection of the environment as well as human health.*

(C) All OSSF installed within the District's Regulated Area, regardless of tract size, must be approved and permitted by the District. This includes tracts larger than ten (10) acres.

*Because of the proximity of the District's Regulated Area to the reservoir, and the fact that the discharge of nutrients is a concern in addition to the discharge of pathogens, all OSSF are required to be approved by the District, irrespective of lot size. This requirement increases protection of the environment as well as human health.*

(D) All tracts of land utilizing OSSF that are subdivided and/or platted within the District's area of jurisdiction surrounding Eagle Mountain Lake after the effective date of this Order must contain at least 1.0 acre if the property is to be served by a public water supply and must contain at least 2.0 acres if the property is to be served by private water wells.

*More restrictive rules are required due to the wide variation of soils in the TRWD regulated areas with a predominance of marginally suitable or unsuitable soils. Soils are typically comprised of severe slow- to non-percolating clays and/or areas of shallow impenetrable rock strata. In addition, the topography of some of the lots around the lake*

*severely limits the actual useable area contained within the property lines. Modern homes have become larger, and consequently, have increased wastewater generation potential, which frequently requires increased lot sizing. A property owner will often plan for a large home plus additional amenities such as circle driveway, pool, and shop building and then give consideration to the location of a septic system. A larger lot requirement should allow homeowners to have all their desired elements plus adequate space for a septic field. The larger lot requirement will allow TRWD to provide more choices of location for the OSSF on the property while still meeting or exceeding all applicable separation distances.*

(E) All OSSF utilizing surface irrigation for effluent disposal are prohibited within the District's area of jurisdiction surrounding Eagle Mountain Lake.

*Tarrant Regional Water District has great concern over the use of surface irrigation for effluent disposal around its reservoirs which are utilized for drinking water supply and contact recreation. This concern is compounded with the implementation of HB 2482 allowing homeowner maintenance. Modeling efforts by the District have demonstrated the potential for increased nitrogen and cryptosporidium loading to the reservoirs with the use of surface irrigation systems near the lake. The aerobic treatment process produces effluent with a high percentage of nitrate nitrogen. Through APEX modeling, a simulated 85-acre subdivision was estimated to contribute 1.063 kg/day of nitrate due to the use of surface irrigation. This load was enough to have a local impact in the reservoir of increasing Chlorophyll-A levels by 10%. Similarly, model results for cryptosporidium from the same simulated area indicate a potential increase in local concentration in the reservoir. This modeling was done based on effluent from maintained systems. If homeowners are responsible for their own systems, there is the potential for the effluent to be of a lower quality due to malfunctioning treatment units and lack of disinfection. In a study done by the Mid-Michigan Health District, samples from 24 aerobic units were collected and analyzed for BOD and TSS. It was found that 76% of the units sampled were discharging effluent that exceeded the NSF secondary treatment guideline of 40 mg/L BOD and 45 mg/L TSS (Wallace). The primary reason cited for Aerobic Treatment Units being out of compliance with TCEQ and EPA requirements is lack of disinfection. Depending on the study source, the number of OSSF's discharging unchlorinated effluent to the surface ranges from 26% to 59% of the total (Maxwell and TRA). Keeping in mind that the TRWD reservoirs serve the dual roles of contact recreation waters and providing raw drinking water to a ten county area, the potential for public health impacts is staggering.*

*Another nutrient of concern for TRWD reservoirs is phosphorus. Most of the District's reservoirs show a historic trend of increasing Chlorophyll-A levels. The reservoirs have also shown to be largely phosphorus limited systems. An increase in the phosphorus load to the reservoir will only encourage further eutrophication that may inhibit water treatment and recreation. Based on effluent samples from the pump tanks of 10 aerobic units and the last tank in 10 conventional systems, the average TP concentration in effluent leaving the treatment unit is 10.5 mg/L. This is 28 times higher than the average*

*TP concentration of a wastewater dominated tributary that feeds into Eagle Mountain reservoir. In addition, the phosphorus loads in the effluent are an average of 85% dissolved ortho-phosphorus, which is readily available for algal consumption. Although surface irrigation systems are designed to allow the soil to absorb all effluent without creating runoff, there is the potential for the effluent to run off the property. A rain event, lack of proper vegetation in the disposal field or oversaturation of the disposal field could cause a significant amount of runoff, which doesn't allow for any reduction of nutrients prior to the effluent hitting the reservoir. Subsurface disposal of effluent ensures that some of the phosphorus load will be attenuated through the soil. In Engineering Approaches for Lake Management - Volume 1: Data Analysis and Empirical Modeling, the authors include a soil retention coefficient in their calculation of the phosphorus load to lakes from septic systems. The soil retention coefficient is based on the following soil characteristics: phosphorus adsorption capacity, natural drainage, permeability, and slope. Due to the fact that most spray irrigation systems are utilized in class IV soil conditions, subsurface disposal in the same area would most likely yield fairly high phosphorus retention due to clay dominated soils.*

*TRWD currently has a Watershed Rule that requires wastewater treatment plants within 5 miles of its reservoirs to have tertiary sand filters as part of their treatment process (31 TAC SubChapter G). The Rule was implemented to assure that a barrier existed in the case of plant upsets and so that effluent was polished prior to discharge into a drinking water supply. TRWD would like to see OSSF's which are in this area of close proximity to the reservoirs discharge subsurface so that a similar level of protection is in place.*

*Other permitting entities (e.g. City of Grand Prairie, City of Texarkana, and Clay County) have received approval for WCOs prohibiting spray irrigation systems in their areas of jurisdiction. There is adequate precedence for the approval of this amendment.*

Reference:

Wallace, J.M. and Loudon, T.L. Field Performance of Aerobic Treatment Units in the Mid-Michigan Health District. Paper #701P01104, American Society of Agricultural and Biological Engineers. <<http://asae.frymulti.com/abstract.asp?aid=15808&t=2>>

Reckhow, Kenneth H. and Steven C. Chapra. Engineering Approaches for Lake Management - Volume 1: Data Analysis and Empirical Modeling. Boston: Butterworth Publishers, 1983.

Study of Residential Aerobic Wastewater Treatment System Chlorinators on Lake Livingston, Trinity River Authority, 1999.

Maxfield, Melissa, Danielli, William E., Treser, Charles D., Vanderslice, Jim. Aerobic Residential Onsite Sewage Systems: An Evaluation of Treated-Effluent Quality. Journal of Environmental Health. Vol. 66, 2003.

(F) Each OSSF that is required by 30 TAC, Chapter 285 *et seq.* to produce secondary quality effluent in the District's Regulated Area shall comply with the following:

- (i) The maintenance contract shall require quarterly maintenance, testing and reporting. In addition to the maintenance requirement in 30 TAC, Chapter 285 *et seq.*, the quarterly testing shall include tests for chlorine residual. The results of all maintenance and testing shall be provided to the District within two (2) weeks of the date of the maintenance and testing.

*Additional testing will help protect the reservoir from pollution and increase the protection of human health by ensuring that OSSF systems are performing to specifications. The requirement that results be reported to the District will enable the District to monitor the performance of facilities most likely to affect the water quality of the reservoir. This provision also increases protection of the environment.*

(G) All OSSF that produce effluent that is required to be disinfected shall comply with the following:

- (i) Each disinfection unit shall be equipped with an approved control system that is capable of shutting off the electrical power supply to the effluent pump or valving off the flow of effluent in the event that disinfection of effluent is interrupted or discontinued for any reason. This controller shall prohibit the reactivation of the electric power supply or opening of the valve until such time as the disinfection unit is fully operable and is functioning properly; and
- (ii) All chlorinators, filters, or other types of disinfecting units shall be commercially manufactured and shall be installed, serviced and operated in compliance with manufacturer's recommendations and requirements.

*These requirements should decrease the likelihood of OSSF systems discharging inadequately disinfected effluent. These provisions will increase protection of public health in the District's Regulated Area.*

(H) No OSSF shall be allowed on islands within the Eagle Mountain Lake Flood Pool.

*OSSF systems on islands are more likely to introduce effluent into the reservoir. This provision will, therefore, increase protection of human health and the environment.*

