

I NEED A NUISANCE ODOR PREVENTION PLAN – SHOULD I BE AFRAID?

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ABSTRACT

Since 1990, 30 TAC§309, Subchapter B has governed siting of wastewater treatment facilities. Rule §309.13(e)(2) makes development of a nuisance odor prevention request an option for owners who, for various reasons, cannot achieve buffer zone criteria detailed earlier in the chapter.

This presentation discusses nuisance odor prevention requests prepared for plant facilities ranging from very small packaged plants to larger municipal facilities. The essential elements of a nuisance odor prevention request (plan) will be addressed. What basic components are required, what does the TCEQ staff considerer when reviewing and approving the requests, and what circumstances may trigger the need for a more robust plan.

The TCEQ has recently required certain permittees to prepare odor prevention plans for facilities as a condition of enforcement action, and has requested such plans for off-site biosolids stockpile and disposal locations. These plans can be more complex and difficult to develop, as the level of scrutiny is increased considerably. Additional considerations for these plans will be discussed, as will options that should be considered when these needs arise.

KEYWORDS

Odor Control, Nuisance Odor Prevention Plan, TCEQ

THE RULES IN TEXAS

Site characteristics for wastewater treatment facilities in Texas are governed under Title 30 of the Texas Administrative Code (TAC), Rule 309.13B, *Unsuitable Site Characteristics*. In addition to establishing standards for location with respect to wetlands, flood plains, water treatment facilities, wells, and aquifer recharge zones, the rule establishes buffer zone requirements primarily for nuisance prevention, and alternatives available to owners unable to satisfy the buffer zone requirements.

RULE §309.13 includes the following requirements:

(e) One of the following alternatives must be met as a compliance requirement to abate and control a nuisance of odor prior to construction of a new wastewater treatment plant unit, or substantial change in the function or use of an existing wastewater treatment unit:

(1) Lagoons with zones of anaerobic activity (e.g., facultative lagoons, un-aerated equalization basins, etc.) may not be located closer than 500 feet to the nearest property line. All other wastewater treatment plant units may not be located closer than 150 feet to the nearest property line. Land used to treat primary effluent is considered a plant unit. Buffer zones for land used to dispose of treated effluent by irrigation shall be evaluated on a case-by-case basis. The permittee must hold legal title or have other sufficient property interest to a contiguous tract of land necessary to meet the distance requirements specified in this paragraph during the time effluent is disposed by irrigation;

(2) The applicant must submit a nuisance odor prevention request for approval by the executive director. A request for nuisance odor prevention must be in the form of an engineering report, prepared and sealed by a licensed professional engineer in support of the request. At a minimum, the engineering report shall address existing climatological conditions such as wind velocity and atmospheric stability, surrounding land use which exists or which is anticipated in the future, wastewater characteristics in affected units pertaining to the area of the buffer zone, potential odor generating units, and proposed solutions to prevent nuisance conditions at the edge of the buffer zone and beyond. Proposed solutions shall be supported by actual test data or appropriate calculations. The request shall be submitted, prior to construction, either with a permit application and subject to review during the permitting process or submitted for executive director approval after the permitting process is completed; or

(3) The permittee must submit sufficient evidence of legal restrictions prohibiting residential structures within the part of the buffer zone not owned by the applicant. Sufficient evidence of legal restriction may, among others, take the form of a suitable restrictive easement, right-of-way, covenant, deed restriction, deed recorded, or a private agreement provided as a certified copy of the original document. The request shall be submitted, prior to construction, either with a permit application and subject to review during the permitting process or submitted for executive director approval after the permitting process is completed.

(f) For a facility for which a permit application, other than a renewal application, is made after October 8, 1990, if the facility will not meet the buffer zone requirement by one of the alternatives described in subsection (e) of this section, the applicant shall include in the application for the discharge permit a request for a variance. A variance will be considered on a case-by-case basis and, if granted by the commission, shall be included as a condition in the permit. This variance may be granted by the commission, consistent with the policies set out in Texas Water Code, §26.003.

In addition to specific rules directed at site restrictions, additional rules address off-site odor restrictions.

30 TAC 112.31-32 Control of Hydrogen Sulfide states:

“No person may cause, suffer, allow, or permit emissions of hydrogen sulfide from a source or sources operated on a property or multiple sources operated on contiguous properties to exceed a net ground level concentration of 0.08 parts per million averaged over any 30-minute period if the downwind concentration of hydrogen sulfide affects a property used for residential, business, or commercial purposes.”

and

“No person may cause, suffer, allow, or permit emissions of hydrogen sulfide from a source or sources operated on a property or multiple sources operated on contiguous properties to exceed a net ground level concentration of 0.12 parts per million averaged over any 30-minute period if the downwind concentration of hydrogen sulfide affects only property used for other than residential, recreational, business, or commercial purposes, such as industrial property and vacant tracts and range lands not normally occupied by people.”

Some cities in Texas have their own nuisance odor ordinances, while most do not.

WHY WOULD I HAVE TO DEVELOP A NUISANCE ODOR PREVENTION PLAN?

Most nuisance odor prevention plans (“requests”) are developed when treatment facilities cannot practically be constructed inside the buffer limits established in 30 TAC 309. This is one of the remedies offered by the TCEQ for those unable to meet buffer zone requirements, but not the only remedy. The plan may be submitted with a permit application, or, if not, can sometimes be submitted within a specified time after issuance of the permit.

Recently, but very rarely, TCEQ has required preparation of much more robust nuisance odor prevention plans as part of enforcement orders for facilities with significant histories of odor complaints. The requirements for plans developed under compliance efforts can include public communication requirements and a number of steps not needed for approval of plans or permits.

OPTIONS FOR MEETING SITE REQUIREMENTS IN 30 TAC §309.13

A permittee is given several options for meeting site restrictions outlined in §309.13:

- Build the plant before March 1, 1990
 - This is obviously not practical for plants being designed today, but it recognizes the change in rule wording implemented at that time, and “grandfathers” older facilities that aren’t undergoing significant changes. Rules before this date defined the 150-foot boundary as being to the “nearest residential property” rather than to the “nearest property line”. The distinction became significant as development moved in next to some facilities.

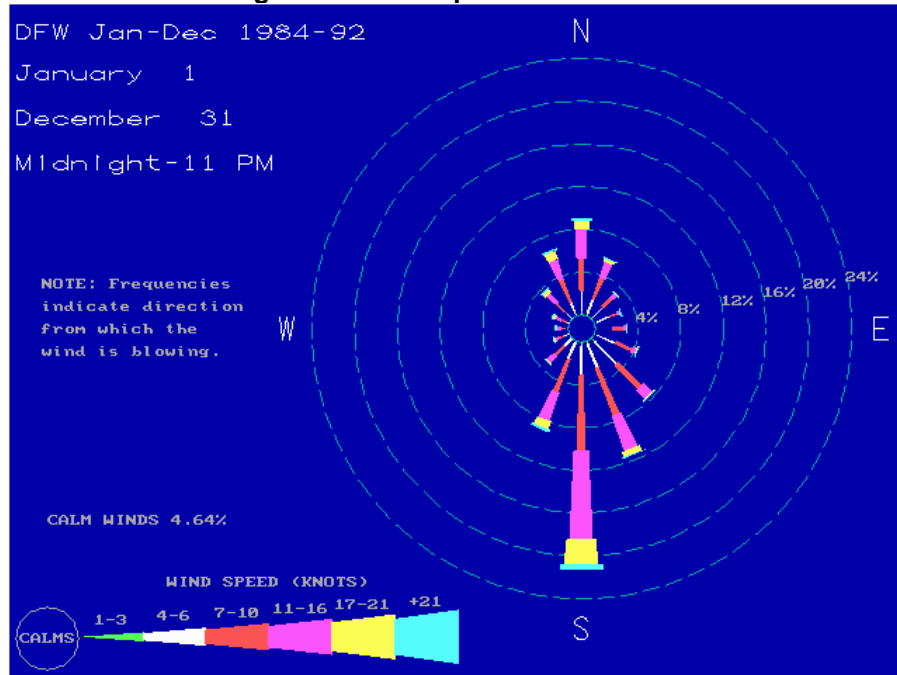
- Satisfy the buffer zone requirements
 - Keep treatment facilities 150 feet from the nearest property line (500 feet for facilities with “zones of anaerobic activity”, typically defined as facultative lagoons.)
 - If the buffer zone restrictions are satisfied, several complications can be avoided. Providing ample buffer can sometimes be the most economical and effective odor abatement method.
- Obtain a buffer zone easement from the adjacent landowner.
 - This is occasionally done (successfully and with minimal hassle), but isn’t always the most pleasant approach to maintaining good relations with the neighbors.
- Request a variance from buffer zone requirements
 - Other options should be exhausted first
 - Nuisance odor prevention plan efforts need to be exhausted prior to pursuing this route.
- **If buffer restrictions can’t be met, develop and submit a nuisance odor prevention plan.**
 - Basic elements of the plan, along with helpful hints, will be discussed below.

WHAT HAS TO BE INCLUDED IN A NUISANCE ODOR PREVENTION PLAN?

A nuisance odor prevention plan can be a 4 or 5 page document for a facility that is otherwise in compliance and has no record of odor complaints. It can become more lengthy and complex for larger facilities and for those that do have a record of complaints. TCEQ’s requirements for a nuisance odor prevention plan are not particularly onerous, but there are a few key elements that must be present in the document before it can be approved:

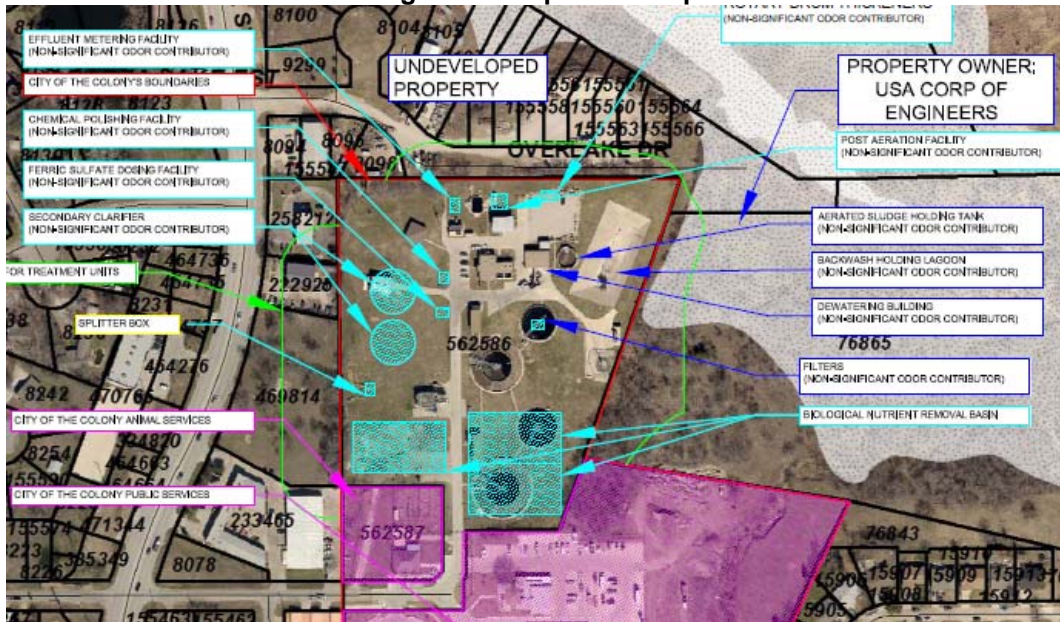
- The document must be sealed by a professional engineer licensed in the State of Texas.
- The document must “address existing climatological conditions such as wind velocity and atmospheric stability”.
 - At a minimum, a wind rose should be included, with commentary on the surrounding topography. Wind roses are readily available at <http://www.tceq.state.tx.us/airquality/monops/windroses.html>

Figure 1 DFW Airport Wind Rose



- The document must address “surrounding land use which exists or which is anticipated in the future”
 - At a minimum, an area map or commentary showing surrounding properties and applicable zoning restrictions, flood boundaries, utility right-of-ways, and other development plans and restrictions.

Figure 2 Sample Site Map



- The document must address the specific use and odor potential for structures falling within the buffer zone
 - Treatment units that are not typically associated with offensive odors (for instance, filtration and ultraviolet disinfection units) can often be located within the buffer zone without the need for implementation of odor control measures.
 - Preliminary treatment units, primary treatment units, and sludge processing units are more likely to be required to have odor control measures proposed.
 - Special consideration may sometimes be given to very small systems.

Figure 3 Very Small Plants May Not Require Extensive Odor Abatement if They Have No History of Complaints



- The document must include “proposed solutions to prevent nuisance conditions at the edge of the buffer zone and beyond”
 - The rule doesn’t specifically require that the proposed solutions be implemented immediately; for systems that have no history of complaints, a plan outlining only proposed potential future odor mitigation measures can sometimes be approved.
 - The rule does not specifically require dispersion modeling or dispersion calculations as a prerequisite for approval, although such efforts may be helpful in obtaining approval for a larger system in a densely populated or otherwise sensitive neighborhood.

Figure 4 Dispersion Modeling is Not Typically Required

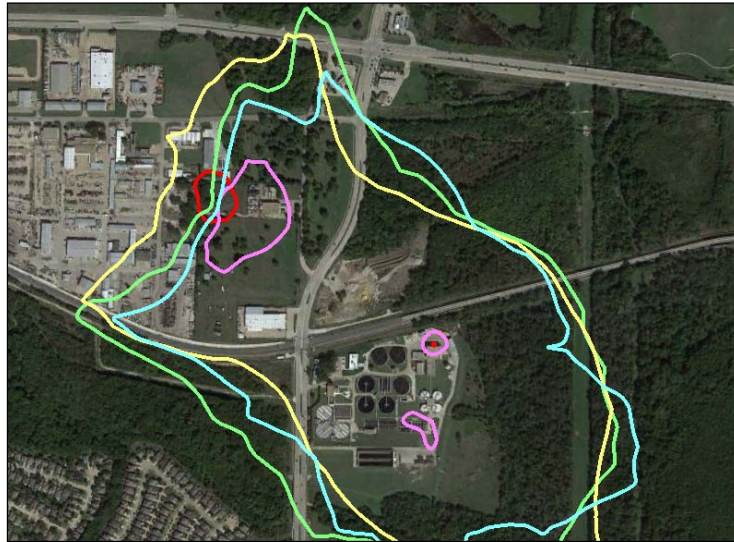


Figure 5 Plants Near Homes and Sensitive Areas May Receive More Scrutiny



- The plan can be submitted either with the permit application documents or, if not, may be submitted after permit issuance, typically with a compliance deadline spelled out in the “Other Requirements” section of the permit.
- As part of (or possibly in lieu of, in certain circumstances), the applicant may submit “sufficient evidence of legal restrictions prohibiting residential structures within the part of the buffer zone not owned by the applicant”. This may include restrictive easements on land that might otherwise be subject to development, but could also include road or utility easements, floodway maps, parks or other public property not subject to development, or other evidence that sensitive receptors won’t occupy properties within the buffer area.

KEYS TO OBTAINING APPROVAL

Obtaining TCEQ approval of a nuisance odor prevention plan is not necessarily difficult or cumbersome if all requirements are met. The following comments have been developed from conversations with TCEQ reviewers and may be helpful in developing a plan that is more readily approvable:

- Submit all items listed above. Make it easy for the TCEQ reviewer!
- Open communication with TCEQ personnel involved is helpful.
- Include a wind rose, at a minimum.
- Don't try to stretch the numbers. The rules don't say "150 feet +/-" – they are specific. 149 feet is not enough.
- Be aware of the facility's odor complaint history before submitting the plan – specifically of whether TCEQ has received and responded to complaints.
 - TCEQ's reviewers in Austin will refer to the local office to determine whether the facility has a history of complaints.
 - A plan that proposes no odor mitigation measures – only future contingency arrangements – may be accepted if the facility has no history of complaints.
 - Specific odor reduction measures (odor control at preliminary and biosolids treatment units, at a minimum) may be requested for facilities that do have histories of complaints.
 - The rules do not prescribe specific mitigation measures, but the complaint history matters in the approval process.
- Be aware that satisfying the buffer limits alone may not grant a "free pass" to a facility with the history or potential of creating complaints, or one proposed to be constructed in a densely populated area with atmospheric or topographic conditions that may aggravate nuisance conditions.

NUISANCE ODOR PREVENTION PLANS IN OTHER AREAS, AND AS AN ENFORCEMENT TOOL

Odor issues can arise in many contested case permit hearings. Sometimes they are a legitimate concern, sometimes the concern is more emotionally based than "technically" based, and sometimes odor concerns are used as leverage to obtain cooperation on issues of greater concern. Permittees across the state have agreed to a wide variety of procedural measures (some genuinely effective and some of questionable effectiveness) to satisfy the concerns of complainants during contested case hearings and/or negotiations to have protests withdrawn.

At beneficial biosolids reuse sites, nuisance odor prevention plans can be required for sludge storage pads, unloading sites, and other critical areas.

Recently, at least one Texas utility has had preparation of a nuisance odor prevention plan imposed as a requirement of a larger enforcement order, in response to numerous complaints. In that case, the TCEQ required submittal of the nuisance odor prevention plan by a specified date (6 months following the order). The order required that the recommendations in the plan, and progress toward implementing those recommendations, be regularly reported to a nearby

neighborhood association on a regular basis. The fundamental contents of a plan prepared for enforcement purposes can be different and can garner significantly more regulatory and public scrutiny than a plan submitted because buffer zone restrictions may not be met. Legal representation is recommended in such a case, since significant capital and operational expenditures for odor control could become mandatory as part of the enforcement action. Discretion is required in balancing recommendations, predicted effectiveness, public expectations, and costs.