

# Texas Commission on Environmental Quality

## INTEROFFICE MEMORANDUM

To: Commissioners Date: October 23, 2012

Thru: Bridget C. Bohac, Chief Clerk  
Zak Covar, Executive Director

From:  Steve Hagle, P.E., Deputy Director  
Office of Air

Subject: Docket No. 2012-0501-RUL. Highlight/Strikeout Version of the Preamble/Rule  
Text Document

The attached document contains revisions in ~~highlight~~/strikeout. Rule Project No. 2012-020-106-AI / Oil & Gas Revisions-Scope was continued from the October 17, 2012 agenda to the October 31, 2012 agenda. Agenda back-up material was initially filed on September 28, 2012.

### *Example as follows:*

#### **CHANGES TO THE PREAMBLE FOR THE PBR §106.352**

- On page 1 – Edited adopting section to indicate adoption “with changes” instead of “without change,” and added “and will be republished.”

#### **BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE ADOPTED RULE**

- On page 3 – Removed “allows compliance with local set back ordinances to meet state requirements,” from the first sentence of the first full paragraph.

#### **SECTION DISCUSSION**

- On page 6, second paragraph, first sentence – added language “proposed amending” and removed “amends” as well as added, “in order to.”
- On page 6, second paragraph – removed the second through fifth sentences.
- On page 6, second paragraph, sixth sentence – removed “This revision will.”
- On page 6, second paragraph – added language “However, in order to avoid unintended interpretations, the commission is not adopting the proposed amendment to §106.352(e)(2). The subsection will read as it did before the proposed amendment.”
- On page 6, second paragraph, last sentence – removed the word “also” between “commission” and “amends.”

### *RESPONSE TO COMMENTS (Distance Measurement section)*

- Page 18 – In response to Representative Burnam’s comment, added clarifying language: “However, in order to avoid unintended interpretations, the commission is not adopting the proposed amendment to §106.352(e)(2). The subsection will read as it did before the proposed amendment.”
- Page 19 – In response to TPA’s comment, added the first sentence, “The commission believes the commenter is misunderstanding the intent of the proposed amendment meant to clarify the distance requirement measurement.”
- Page 19 – In response to TPA’s comment, removed language: “The commission has not changed the rule in response to this comment.”
- Page 19 – In response to TPA’s comment, added language “proposed” between “the” and “rulemaking,” replaced “does” with “would,” and replaced “endorse” with “have endorsed” in order to correct the tense.
- Page 19 – In response to TPA’s comment, added the word “proposed” between “the” and “change,” added “would” between “rule” and “simply” and replaced “clarifies” with “have clarified” in order to correct the tense.
- Page 19 – In response to TPA’s comment, added the last sentence “However, in order to avoid unintended interpretations, the commission is not adopting the proposed amendment to §106.352(e)(2). The subsection will read as it did before the proposed amendment.”
- Page 20 – In response to TxOGA’s comment, replaced “by local officials regarding their ordinance” with “from any other applicable distance requirement.”
- Page 21 – In response to TPA’s comment, removed the language: “As previously discussed, the rulemaking is only meant to clarify the distance requirements in the PBR.”

### **CHANGES TO THE RULE LANGUAGE IN §106.352**

#### *§106.352. OIL AND GAS HANDLING AND PRODUCTION FACILITIES*

- Page 41 – Section 106.352(e)(2), removed proposed new language: “This distance limitation does not apply as specified in subparagraphs (A) - (C) of this paragraph. Compliance with local set-back ordinances with distance requirements greater than or equal to 50 feet between the facility and a receptor satisfies all separation requirements of this paragraph.”
- Page 41 – Section 106.352(e)(2), removed brackets from last sentence so that final section will read: “Any facility shall be operated at least 50 feet from any property line or receptor (whichever is closer to the facility). This distance limitation does not apply to the following:” which is the adopted rule language before proposed amendments.

### **CHANGES TO THE TECHNICAL SUMMARY FOR THE NON-RULE STANDARD PERMIT**

#### *PERMIT CONDITION ANALYSIS AND JUSTIFICATION*

- On page 3, last paragraph, first sentence – added language “proposed amending” and removed “amends” as well as added, “in order to.”
- On page 3, last paragraph – removed the second through fifth sentences.
- On page 3, last, sixth sentence – removed “This revision will.”
- On page 7, paragraph continued from page 6 – added language “However, in order to avoid unintended interpretations, the commission is not adopting the proposed amendment to subsection (e)(2). The subsection will read as it did before the proposed amendment.”

## **ANLAYSIS OF COMMENTS**

- Page 6 – In response to Representative Burnam’s comment, added clarifying language: “However, in order to avoid unintended interpretations, the commission is not adopting the proposed amendment to subsection (e)(2). The subsection will read as it did before the proposed amendment.”
- Page 7 – In response to TPA’s comment, added the first sentence, “The commission believes the commenter is misunderstanding the intent of the proposed amendment meant to clarify the distance requirement measurement.”
- Page 7 – In response to TPA’s comment, removed language: “The commission has not changed the rule in response to this comment.”
- Page 7 – In response to TPA’s comment, added language “proposed” between “the” and “rulemaking,” replaced “does” with “would,” and replaced “endorse” with “have endorsed” in order to correct the tense.
- Page 7 – In response to TPA’s comment, added the word “proposed” between “the” and “change,” added “would” between “rule” and “simply” and replaced “clarifies” with “have clarified” in order to correct the tense.
- Page 7 – In response to TPA’s comment, added the last sentence “However, in order to avoid unintended interpretations, the commission is not adopting the proposed amendment to subsection (e)(2). The subsection will read as it did before the proposed amendment.”
- Page 7 – In response to TxOGA’s comment, replaced “by local officials regarding their ordinance” with “from any other applicable distance requirement.”
- Page 8 – In response to TPA’s comment, removed the language: “As previously discussed, the rulemaking is only meant to clarify the distance requirements in the PBR.”

## **CHANGES TO THE RULE LANGUAGE IN THE NON-RULE STANDARD PERMIT**

- Page 15 – Subsection (e)(2), removed proposed new language: “This distance limitation does not apply as specified in subparagraphs (A) - (C) of this paragraph. Compliance with local set-back ordinances with distance requirements greater than or equal to 50 feet between the facility and a receptor satisfies all separation requirements of this paragraph.”
- Page 15 – subsection (e)(2), removed brackets from last sentence so that final section will read: “Any OGS facility shall be operated at least 50 feet from any property line or receptor (whichever is closer to the facility). This distance limitation does not apply to the following:” which is the adopted rule language before proposed amendments.

### **Attachments**

Complete preamble and rule language of Chapter 106.352 with the changes listed above.  
Complete preamble and standard permit rule language with the changes listed above.

cc: Chief Clerk, 2 copies  
Executive Director’s Office  
Anne Idsal  
Curtis Seaton  
Office of General Counsel  
Susana M. Hildebrand, P.E.  
Tasha Burns  
Bruce McAnally

The Texas Commission on Environmental Quality (TCEQ or commission) adopts the amendment to §106.352.

The amendment is adopted **with change** ~~without change~~ to the proposed text as published in the June 15, 2012, issue of the *Texas Register* (37 TexReg 4341) **and will be republished.**

### **Background and Summary of the Factual Basis for the Adopted Rule**

On January 26, 2011, the commission adopted a new §106.352, *Oil and Gas Handling and Production Facilities*. Subsections (a) - (k) of the new section consist of updated control, monitoring, and reporting requirements that apply in 23 counties of North Central Texas (Archer, Bosque, Clay, Comanche, Cooke, Coryell, Dallas, Denton, Eastland, Ellis, Erath, Hill, Hood, Jack, Johnson, Montague, Palo Pinto, Parker, Shackelford, Stephens, Somervell, Tarrant, and Wise), commonly known as the Barnett Shale Region. Subsection (l) consists of the requirements that existed in the previous version of §106.352 and applies to the remainder of the state's counties.

The new §106.352 is the result of an ongoing, multi-phased evaluation of permits by rule (PBR) and standardized authorizations (standard permits). The goals of this evaluation include: updating administrative and technical requirements; making appropriate changes to registration or notification requirements; ensuring that air emissions from

specific facilities are protective of public health and welfare; including practically enforceable record requirements; and allowing the commission to more effectively focus resources on facilities that significantly contribute air contaminants to the atmosphere. To accomplish these goals, the commission provided a minimum setback of oil and gas facilities from receptors and a method of updating its inventory of existing facilities. Through this evaluation, the commission determined a need to significantly revise the PBR and standard permit for oil and gas facilities or groups of facilities at a site, which resulted in the January 2011 adoption.

Updating §106.352 was particularly critical for oil and gas site in urban locations or in close proximity to the public, and was adopted primarily to better regulate production of oil and natural gas in the Barnett Shale Region.

The designation of the Barnett Shale Region counties was based on the underlying geologic formation as recognized by the Texas Railroad Commission (RRC), the high volume of current and potential drilling sites, and their close proximity to dense urban populations. The implementation of the rule in the Barnett Shale Region gave the commission an opportunity to evaluate its administration in the area that presented the most immediate challenge. This rulemaking is a result of the ongoing evaluation. The updated §106.352 has been in effect for facilities constructed since April 1, 2011, and the commission has had the opportunity to evaluate its appropriateness based on

population density, the total number and concentration of Barnett Shale formation drilling and producing oil and gas facilities near population centers, and monitoring and compliance records.

The adopted amendment to §106.352 removes certain counties from the applicability of rules regulating oil and gas facilities in the Barnett Shale Region, ~~allows compliance with local set-back ordinances to meet state requirements~~, extends the deadline for historical notification of facility location and method of authorization, and corrects typographical errors.

### **Section Discussion**

As stated in the preamble from the January 26, 2011, adoption, the commission determined that the rule should apply to the area of the state with the greatest number of new or modified facilities located in close proximity to the greatest number of residents. The commission amends §106.352(a)(1) to remove Archer, Bosque, Coryell, Clay, Comanche, Eastland, Shackelford, and Stephens Counties from the applicability of §106.352(a) - (k). Section 106.352(l) applies to the removed counties. Using data from the RRC, the commission evaluated oil and gas operations in the Barnett Shale Counties based on population density, and the total number and concentration of Barnett Shale drilling and producing facilities in close proximity to population centers.

The commission has examined monitoring and enforcement data in the removed counties to confirm that no ambient air quality standards are threatened and there are no ongoing rule compliance problems. The commission has analyzed the drilling and production activity in Archer, Bosque, Clay, Comanche, Coryell, Eastland, Shackelford, and Stephens Counties, and the commission removes these counties based primarily on the relatively low density of Barnett Shale oil and gas facilities near the associated population centers.

In this rulemaking, the commission has complied with the applicable requirements of Senate Bill (SB) 1134, 82nd Legislature, 2011, which requires evaluation of four criteria before adopting or amending a PBR or standard permit. First, the legislation requires a regulatory analysis as provided by Texas Government Code, §2001.0225. The commission has performed this analysis in accordance with its established procedures for rulemaking and concluded that these rule amendments are not a major environmental rule, because the amendments do not affect the economy of the state or a portion of the state in a material way. The second and third criteria involve an evaluation of air quality monitoring and modeling data to establish any emissions limits or emissions related requirements. This rulemaking does not establish or revise any emissions limit or emissions related requirements. Therefore, the commission has determined these criteria are not applicable. However, the commission has examined monitoring data from the removed counties and has determined that the requirements

of §106.352(l) will ensure that the purposes of the Texas Clean Air Act are not contravened and there will be no threat to public health. Fourth, the commission is required to consider whether the requirements of a permit should be imposed only on facilities that are located in a particular geographic region of the state. The commission has complied with this requirement, considering whether the requirements of §106.352(a) - (k) can be made applicable to a smaller geographic region of the state. Oil and gas facilities in the removed counties are instead required to comply with §106.352(l), applicable to non-Barnett Shale Counties.

The commission amends §106.352(b)(7)(B) and (f)(1) to extend the deadline for owners and operators of existing oil and gas facilities to provide notification to the commission of the facility location and method of authorization from January 1, 2013, to January 5, 2015. The January 1, 2013, date was originally tied to the date for authorization of maintenance, startup, and shutdown (MSS) emissions (January 5, 2012). However, SB 1134, codified in Texas Health and Safety Code (THSC), §382.051962, extended the MSS authorization deadline to January 5, 2014. Therefore, to remain consistent with the change in timing for the MSS authorization, the commission extends the historical notification deadline. Because this rulemaking does not specifically address the authorization of MSS, the deadlines for submission of applications to authorize MSS in THSC, §382.051962(c) do not apply.

The commission amends §106.352(d)(2)(C) and (F) to correct a typographical error in each subparagraph by inserting the word "be" between the words "otherwise" and "authorized" in both subsections.

The commission **proposed amending** amends §106.352(e)(2) to account for local ordinances which require an equal or greater separation of oil and gas facilities from a receptor, **in order to**. ~~The Barnett Shale Region contains some areas of significant population density and significant concentrations of drilling and production. Local governments may determine that specific conditions within their jurisdiction require a greater setback to ensure the protection of their citizens. This rule amendment clarifies the measurement of minimum distance requirements in §106.352(e)(2), where such a local ordinance exists, requiring equal or greater set back distances from receptors. This rule requires no additional separation should such a local ordinance exist, and the commission would consider compliance with the ordinance to meet both the separation required from a receptor and a property line as stated in §106.352(e)(2). This revision will provide flexibility for operators located in urban areas, on small well pad sites, with difficulty meeting property line distance limitations while ensuring continued protection of the human health and the environment. **However, in order to avoid unintended interpretations, the commission is not adopting the proposed amendment to §106.352(e)(2). The subsection will read as it did before the proposed amendment.** The commission also amends §106.352(e)(2)(B) to add the words "less than" between the~~

word "use" and the number "50" since an existing separation of 50 feet would require no action from the oil and gas owner or operator.

The commission amends §106.352(k)(2)(A) to refer to the TCEQ internet Web page instead of the "commissioner's internet Web page."

The commission amends §106.352(l)(5) to refer to the "executive director" instead of the "Office of Permitting and Registration" as that office designation is obsolete.

### **Final Regulatory Impact Analysis Determination**

The commission reviewed the rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225 and determined that the rulemaking does not meet the definition of a "major environmental rule." Texas Government Code, §2001.0225 states that 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 of the state." The purpose of this rulemaking is removal of Archer, Bosque, Clay, Comanche, Coryell, Eastland, Shackelford, and Stephens Counties from the list of Barnett Shale Counties subject to §106.352(a) - (k), addition of clarifying language to the PBR and oil and gas standard

permit for the measurement of minimum distance requirements, and extension of the deadline for the historical notification required in §106.352(f)(1) from January 1, 2013, to January 5, 2015. It is not expected that this rulemaking will adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, or the public health and safety of the state or a sector of the state.

Furthermore, while the rulemaking does not constitute a major environmental rule, even if it did, a regulatory impact analysis would not be required because the rulemaking does not meet any of the four applicability criteria for requiring a regulatory impact analysis for a major environmental rule. Texas Government Code, §2001.0225 applies only to a major environmental rule which: "(1) exceeds a standard set by federal law, unless the rule is specifically required by state law; (2) exceeds an express requirement of state law, unless the rule is specifically required by federal law; (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) adopts a rule solely under the general powers of the agency instead of under a specific state law." Specifically, the rulemaking does not meet any of the four applicability criteria listed in Texas Government Code, §2001.0225 because: 1) the rulemaking is not designed to exceed any relevant standard set by federal law; 2) the rulemaking does not exceed an express requirement of state law; 3) no contract or delegation agreement covers the topic that is the subject of this rulemaking; and 4) the

rulemaking is authorized by specific sections of THSC, Chapter 382 (also known as the Texas Clean Air Act), and the Texas Water Code, which are cited in the Statutory Authority section of this preamble.

The commission's interpretation of the regulatory impact analysis requirements is also supported by a change made to the Texas Administrative Procedure Act (APA) by the legislature in 1999. In an attempt to limit the number of rule challenges based upon APA requirements, the legislature clarified that state agencies are required to meet these sections of the APA against the standard of "substantial compliance" as required in Texas Government Code, §2001.035. The legislature specifically identified Texas Government Code, §2001.0225 as falling under this standard. The commission has substantially complied with the requirements of Texas Government Code, §2001.0225.

Additionally, SB 1134 applies to this rulemaking. SB 1134 states that the commission may not amend an existing PBR or an existing standard permit relating to an oil and gas facility unless the commission: 1) conducts a regulatory analysis as provided by Texas Government Code, §2001.0225; 2) determines, based on the evaluation of credible air quality monitoring data, that the emissions limits or other emissions-related requirements of the permit are necessary to ensure that the intent of the Texas Clean Air Act is not contravened, including the protection of the public's health and physical property; 3) establishes any required emissions limits or other emissions-related

requirements based on: (A) the evaluation of credible air quality monitoring data; and (B) credible air quality modeling that is not based on the worst-case scenario of emissions or other worst-case modeling scenarios unless the actual air quality monitoring data and evaluation of that data indicate that the worst-case scenario of emissions or other worst-case modeling scenarios yield modeling results that reflect the actual air quality monitoring data and evaluation; and 4) considers whether the requirements of the permit should be imposed only on facilities that are located in a particular geographic region of the state.

The commission has conducted a regulatory analysis in accordance with Texas Government Code, §2001.0225 as previously described. The executive director examined monitoring and enforcement data in the removed counties to confirm that no ambient air quality standards are threatened and that there are no ongoing rule compliance problems. Finally, the rulemaking does not establish an emission limit or emission-related requirements and are adopted in accordance with SB 1134.

The commission invited public comment regarding the draft regulatory impact analysis determination during the public comment period. One comment was received on the regulatory impact analysis determination.

### **Takings Impact Assessment**

The commission evaluated the rulemaking and performed an analysis of whether the rulemaking constitutes a taking under Texas Government Code, Chapter 2007. The commission's preliminary assessment indicates Texas Government Code, Chapter 2007 does not apply.

Under Texas Government Code, §2007.002(5), taking means: "(A) a governmental action that affects private real property, in whole or in part or temporarily or permanently, in a manner that requires the governmental entity to compensate the private real property owner as provided by the Fifth and Fourteenth Amendments to the United States Constitution or Section 17 or 19, Article I, Texas Constitution; or (B) a governmental action that: (i) affects an owner's private real property that is the subject of the governmental action, in whole or in part or temporarily or permanently, in a manner that restricts or limits the owner's right to the property that would otherwise exist in the absence of the governmental action; and (ii) is the producing cause of a reduction of at least 25 percent in the market value of the affected private real property, determined by comparing the market value of the property as if the governmental action is not in effect and the market value of the property determined as if the governmental action is in effect."

Promulgation and enforcement of the rulemaking is neither a statutory nor a

constitutional taking of private real property. The primary purpose of the rulemaking is to remove Archer, Bosque, Clay, Comanche, Coryell, Eastland, Shackelford, and Stephens Counties from the list of Barnett Shale Counties subject to §106.352(a) - (k), add clarifying language to the PBR and oil and gas standard permit regarding the measurement of minimum distance requirements, and extend the deadline for the historical notification required in §106.352(f)(1) from January 1, 2013, to January 5, 2015. The rulemaking does not affect a landowner's rights in private real property because this rulemaking does not burden, restrict, or limit the owner's right to property, nor does it reduce the value of any private real property by 25% or more beyond that which would otherwise exist in the absence of the regulations. Therefore, the rule does not constitute a taking under Texas Government Code, Chapter 2007.

### **Consistency with the Coastal Management Program**

The commission determined that this rulemaking action relates to an action or actions subject to the Texas Coastal Management Program (CMP) in accordance with the Coastal Coordination Act of 1991, as amended (Texas Natural Resources Code, §§33.201 *et seq.*), and commission rules in 30 TAC Chapter 281, Subchapter B, Consistency with the Texas Coastal Management Program. As required by §281.45(a)(3), Actions Subject to Consistency with the Goals and Policies of the Texas Coastal Management Program (CMP), and 31 TAC §505.11(b)(2), Actions and Rules Subject to the Coastal Management Program, commission rules governing air pollutant emissions must be consistent with

the applicable goals and policies of the CMP. The commission reviewed this action for consistency with the CMP goals and policies in accordance with the rules of the Coastal Coordination Advisory Committee and determined that the action is consistent with the applicable CMP goals and policies.

The CMP goal applicable to this adopted rulemaking action is the goal to protect, preserve, and enhance the diversity, quality, quantity, functions, and values of coastal natural resource areas (31 TAC §501.12(l), Goals). This rule will not authorize new emissions in coastal areas. Therefore, in accordance with 31 TAC §505.22(e), Consistency Required for New Rules and Rule Amendments Subject to the Coastal Management Program, the commission affirms that this rulemaking action is consistent with CMP goals and policies.

### **Effect on Sites Subject to the Federal Operating Permits Program**

Chapter 106 is an applicable requirement under 30 TAC Chapter 122, Federal Operating Permits Program. Owners or operators subject to the federal operating permit program must, consistent with the revision process in Chapter 122, include any changes made using the amended Chapter 106 requirements into their operating permit.

### **Public Comment**

The commission held a public hearing on this rule on July 10, 2012, at 7:00 p.m. in Fort

Worth, at the TCEQ Dallas/Fort Worth Regional Office, located at 2309 Gravel Drive, Fort Worth, Texas. This hearing was held in conjunction with a public meeting on similar revisions to the Air Quality Standard Permit for Oil and Gas Handling and Production Facilities. The comment period closed on July 16, 2012.

The commission received comments from Texas Representative Lon Burnam, an individual, the Texas Alliance of Energy Producers (TAEP), the Texas Oil & Gas Association (TxOGA), and the Texas Pipeline Association (TPA). The commission also received a comment from Duggins, Wren, Mann & Romero, LLP which was submitted after the close of the comment period.

Regarding removal of the eight counties from the applicability of §106.352(a) - (k), TAEP, TxOGA and TPA submitted comments in support of the removal of the counties, the individual opposed removal of the counties, and Representative Burnam did not agree that the commission had provided adequate justification for removal of the counties. Regarding extension of the historical notification deadline, TPA supported the amendment. Regarding the distance requirements in §106.352(e)(2), Representative Burnam and TXOGA supported the amendment, TPA opposed, and TXOGA and TPA provided alternate considerations.

## **Response to Comments**

### *Removal of counties from applicability of §106.352(a) - (k)*

Representative Lon Burnam commented that "the agency has not met the requirements of Sec. 382.051961(b), Health and Safety Code, regarding certain analyses and evaluations that must be made prior to amending an existing permit by rule or standard permit." Representative Burnam commented that the THSC requires that any revised emission limits be based on the evaluation of air quality monitoring and modeling data, and that removing the eight counties from applicability of subsections (a) - (k) does revise emission limits applicable to oil and gas facilities in those counties.

**The commission has not made changes to the rule based on this comment.**

**This rulemaking does not establish or revise any emissions limit or emissions related requirement of subsections (a) - (k) or (l). The removal of the applicability of subsections (a) - (k) to facilities in the eight counties is not a revised emission limit. All counties in Texas that are not included as Barnett Shale counties are included in subsection (l). The initial designation of the Barnett Shale Region counties was based on the underlying geologic formation as recognized by the RRC, the high volume of current and potential drilling sites, and the close proximity of those sites to dense, urban populations. The commission has had the opportunity to evaluate facilities in the affected counties based on population density, the**

**total number and concentration of Barnett Shale formation drilling and producing oil and gas facilities near population centers, and monitoring and compliance records. The monitoring and compliance records confirm that no ambient air quality standards are threatened and that there are no ongoing rule compliance problems, given the relatively low density of Barnett Shale oil and gas facilities near the associated population centers. The commission has determined that §106.352(l) is a more appropriate authorization for the referenced eight counties, and the requirements will ensure that the purposes of the Texas Clean Air Act are not contravened and there will be no threat to public health.**

Representative Burnam commented that this rulemaking "appears to meet the statutory definition of a major environmental rule. The definition of a Major Environmental Rule in Sec. 2001.0225(g) (3), Government Code, is not limited to rules which 'affect the economy of the state or a portion of the state in a material way,' as the agency states. The definition also applies to rules 'that may adversely affect...the environment, or the public health and safety of the state or a sector of the state.' Therefore, I believe the agency must conduct the analysis required under Sec.2001.0225(b) before moving forward with this rule project."

**The commission has not made changes to the rule based on this comment.**

**As discussed in the Final Regulatory Impact Analysis Determination, the commission performed this analysis in accordance with its established procedures for rulemaking consistent with the requirements of Texas Government Code, §2001.0225 and concluded this rulemaking is not a major environmental rule. Specifically, the commission concluded this is not a major environmental rule because it does not affect the economy of the state or a portion of the state in a material way. Removing the eight counties from the applicability of subsection (a) - (k) and therefore subjecting them to subsection (l), will not adversely affect the environment and will ensure the protection of public health and safety, as it does for the rest of the counties in Texas.**

An individual opposed removal of any counties from the applicability of subsections (a) - (k).

**The commission appreciates the individual's participation in the rulemaking process. The comment did not include justification on why the individual did not want the counties removed and the commission has not changed the rule in response to this comment.**

TAEP, TxOGA, and TPA support the removal of the eight counties from the applicability

of subsections (a) - (k). TAEP and TPA supported removal based on low production rates as well as low population density.

**The commission appreciates the support.**

*Historical Notification Extension*

TPA supported the extension of the deadline for notification of historical facilities and their method of authorization.

**The commission appreciates the support.**

*Distance Measurement*

Representative Burnam supported the change to §106.352(e)(2), regarding the clarification on distance requirements when a local ordinance requires a distance equal or greater than 50 feet. TxOGA also supported the change as it related to recognition of local ordinances for set-back distances that already meet the 50 feet minimum distance.

**The commission appreciates the support. However, in order to avoid unintended interpretations, the commission is not adopting the proposed amendment to §106.352(e)(2). The subsection will read as it did before the proposed amendment.**

TPA opposed allowing "local ordinances to supplant state setback requirements." TPA's comment stated, "We recognize that home-rule cities have broad powers to enact and enforce ordinances to promote the general welfare of their citizens, but those powers are not without limits. For example, the Texas Clean Air Act (TCAA) sets limits on a municipality's authority to enact ordinances for the control and abatement of air pollution or any other ordinance, where such ordinances are inconsistent with the TCAA or TCEQ rules or orders. Tex Health and Safety Code § 382.113(a)(2)." TxOGA commented that they do not support "pre-empting state air quality authority/primacy."

**The commission believes the commenter is misunderstanding the intent of the proposed amendment meant to clarify the distance requirement measurement. The commission has not changed the rule in response to this comment. The commission did not evaluate the merits of any local ordinance and the proposed rulemaking would does not have endorsed endorse any local ordinance. Rather, the proposed change to the rule would simply have clarified clarifies that the 50 feet required in the PBR is not in addition to any applicable local ordinance that requires a distance equal to or greater than 50 feet. Local ordinances must stand on their own legal merit. However, in order to avoid unintended interpretations, the commission is not adopting the proposed amendment to §106.352(e)(2).**

**The subsection will read as it did before the proposed amendment.**

TxOGA commented that clarification was needed regarding "compliance with local setback ordinances." Specifically, TxOGA asked if a city grants a waiver from the setback distance required by a local ordinance, would the waiver also apply to the PBR's 50-foot setback required in §106.352(e)(2)?

**The commission clarifies that 50 feet is the minimum distance required for compliance with the PBR, regardless of waivers granted from any other applicable distance requirement by local officials regarding their ordinance. The only exceptions to the 50 feet requirement are listed in §106.352(e)(2)(A) - (C).**

TPA suggested the addition of a fourth exception to the 50 feet requirement in §106.352(e)(2). TPA recommended that the TCEQ provide that facilities that have no receptors within 250 feet of the facility's property line qualify for an exception. TPA commented that this provision would add additional compliance flexibility, particularly for those sites where a 50-foot buffer from the facility to the property line is not possible. TPA submitted this suggested language for §106.352(e)(2)(D) "any facility that has no receptor within 250 feet of the facility's property line at the time this section is claimed, registered, or certified."

**The commission has not changed the rule in response to this comment.**

**Although the suggestion is outside the scope of this proposal, we are committed to continue working with any companies/individuals to further refine the rule, make changes to it in the future, and issue guidance.**

TPA commented that "...TCEQ revise its proposal to clearly indicate the continuing application of the exceptions in subsections (e)(2)(A) through (C) to a local ordinance."

**The commission clarifies that the exceptions in §106.352(e)(2)(A) - (C) apply to the 50 feet distance requirement in the PBR. ~~As previously discussed, the rulemaking is only meant to clarify the distance requirements in the PBR.~~ Compliance with, or exceptions to, a local ordinance are outside of TCEQ's regulatory authority.**

*General*

Duggins, Wren, Mann and Romero, LLP commented that the applicability language of both the PBR and standard permit include that subsections (a) - (k) are applicable "only" in the Barnett Shale counties which are listed in subsection (a)(1), while guidance from TCEQ allows facilities outside of the listed counties to choose to operate under subsections (a) - (k). The commenter requested clarification.

**The commission has not changed the rule in response to this comment. The language in the rule is meant to clarify that no facilities outside of the Barnett Shale counties are required to comply with subsections (a) - (k). However, it is not meant to prohibit facilities in other counties from choosing to comply with those subsections. The commission has processed applications for sites outside of the listed counties since the January 26, 2011, adoption date of §106.352. The commission maintains that if companies so desire, facilities located outside the Barnett Shale counties may voluntarily register under the requirements in §106.352(a) - (k), or the non-rule standard permit.**

## **SUBCHAPTER O: OIL AND GAS**

### **§106.352**

#### **Statutory Authority**

The amendment is adopted under Texas Water Code (TWC), §5.103, concerning Rules, and §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the TWC; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purposes of the Texas Clean Air Act. The amendment is also adopted under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; §382.012, concerning State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the control of the state's air; §382.051, concerning Permitting Authority of Commission; Rules, which authorizes the commission to issue a permit by rule for types of facilities that will not significantly contribute air contaminants to the atmosphere; §382.05196, concerning Permits by Rule, which authorizes the commission to adopt permits by rule for certain types of facilities; §382.051962, which extended the deadline for owners or operators of oil and gas facilities to authorize maintenance, startup, and shutdown emissions to January 5, 2014; §382.051963, which authorizes the commission to obtain

information about oil and gas authorizations, including location; and §382.057, concerning Exemption, which authorizes exemptions from permitting.

The adopted amendment implements THSC, §§382.002, 382.011, 382.012, 382.017, 382.051, 382.05196, and 382.057.

**§106.352. Oil and Gas Handling and Production Facilities.**

(a) Applicability. This section applies to all stationary facilities, or groups of facilities, at a site which handle gases and liquids associated with the production, conditioning, processing, and pipeline transfer of fluids or gases found in geologic formations on or beneath the earth's surface including, but not limited to, crude oil, natural gas, condensate, and produced water with the following conditions:

(1) The requirements in subsections (a) - (k) of this section are applicable only for new projects and related facilities located in the Barnett Shale ([Archer, Bosque, Clay, Comanche,] Cooke, [Coryell,] Dallas, Denton, [Eastland,] Ellis, Erath, Hill, Hood, Jack, Johnson, Montague, Palo Pinto, Parker, [Shackelford, Stephens,] Somervell, Tarrant, and Wise Counties) on or after April 1, 2011. For all other new projects and related facilities in all other counties of the state, subsection (l) of this section is applicable.

(2) Only one Oil and Gas Handling and Production Facilities permit by rule (PBR) for an oil and gas site (OGS) may be claimed or registered for each combination of dependent facilities and authorizes all facilities in sweet or sour service. This section may not be used if operationally dependent facilities are authorized by the Air Quality Standard Permit for Oil and Gas Sites, or a permit under §116.111 of this title (relating to General Application). Existing authorized facilities, or groups of facilities, at an OGS under this section which are not changing certified character or quantity of emissions must only meet subsections (i) and (k) of this section (protectiveness review and planned maintenance, startup, and shutdown (MSS) requirements) and otherwise retain their existing authorization. Except for planned MSS activities which must meet the requirements of subsection (i) of this section, any combination of dependent facilities with a permit under §116.111 of this title cannot also claim this section for any new facility, or changes to an existing facility, which handles (or is related to the processing of) crude oil, condensate, natural gas, or any other petroleum raw material, product, or by-product.

(3) This section does not relieve the owner or operator from complying with any other applicable provision of the Texas Health and Safety Code, Texas Water Code, rules of the Texas Commission on Environmental Quality (TCEQ), or any

additional local, state, or federal laws or regulations. Emissions that exceed the limits in this section are not authorized and are violations.

(4) Emissions from upsets, emergencies, or malfunctions are not authorized by this section. This section does not regulate methane, ethane, or carbon dioxide.

(b) Definitions and Scope.

(1) Facility is a discrete or identifiable structure, device, item, equipment, or enclosure that constitutes or contains a stationary source. Stationary sources associated with a mine, quarry, drilling, or a well test lasting less than 72 hours are not considered facilities.

(2) Receptor includes any building which is in use as a single or multi-family residence, school, day-care, hospital, business, or place of worship at the time this section is registered. A residence is a structure primarily used as a permanent dwelling. A business is a structure that is occupied for at least eight [8] hours a day, five [5] days a week, and does not include businesses who are handling or processing materials as described in subsection (a) of this section. This term does not include structures occupied or used solely by the owner or operator of the OGS facility, or the mineral

rights owner of the property upon which the OGS facility is located. All measurements of distance to receptors shall be taken from the emission release point at the OGS facility that is nearest to the point on the building that is nearest to the OGS facility.

(3) An OGS is defined as all facilities which meet each of the following:

(A) Located on contiguous or adjacent properties;

(B) Under common control of the same person (or persons under common control); and

(C) Designated under same two digit standard industrial classification (SIC) codes.

(4) For purposes of determining applicability of Chapter 122 of this title (relating to Federal Operating Permits Program), the definitions of §122.10 of this title (relating to General Definitions), apply.

(5) A project under this section is defined as the following and must meet all requirements of this section prior to construction or implementation of changes:

(A) Any new facility or new group of operationally dependent facilities at an OGS;

(B) Physical changes to existing authorized facilities or group of facilities at an OGS which increase the potential to emit over previously certified emission limits; or

(C) Operational changes to existing authorized facilities or group of facilities at an OGS which increase the potential to emit over previously certified emission limits.

(6) For purposes of registration under this section, the following facilities shall be included:

(A) All facilities or groups of facilities at an OGS which are operationally dependent on each other;

(B) Facilities must be located within a 1/4 mile of a project emission point, vent, or fugitive component, except for those components excluded in subparagraph (C) of this paragraph;

(C) If piping or fugitive components are the only connection between facilities and the distance between facilities exceeds 1/4 mile, then the facilities are considered separate for purposes of this registration;

(D) The boundaries of the registration become fixed at the time this section is claimed and registered. No individual facility may be authorized under more than one registration;

(E) Any facility or group of facilities authorized under an existing PBR registration which is operationally dependent on a project must be revised to incorporate the project. Existing authorized facilities, or group of facilities, at an OGS under this section which are not changing certified character or quantity of emissions must only meet subsections (i) and (k) of this section (the protectiveness review and planned MSS requirements) and otherwise retain their existing authorization; and

(F) All facilities at an OGS registered under this section must collectively emit less than or equal to 250 tons per year (tpy) of nitrogen oxides (NO<sub>x</sub>) or carbon monoxide (CO); 15 tpy of particulate matter with less than 10 microns (PM<sub>10</sub>); 10 tpy of particulate matter less than 2.5 microns (PM<sub>2.5</sub>); and 25 tpy of volatile organic compounds (VOC), sulfur dioxide (SO<sub>2</sub>), hydrogen sulfide (H<sub>2</sub>S), or any other air

contaminant except carbon dioxide, water, nitrogen, methane, ethane, hydrogen, and oxygen.

(7) For purposes of all previous claims of this section (or any previous version of this section) where no project is occurring:

(A) existing authorized facilities, or group of facilities, at an OGS must meet only subsection (i) of this section no later than January 5, 2012; and

(B) submit a notification in accordance with subsection (f) of this section no later than January 5, 2015 [January 1, 2013].

(8) For purposes of ensuring protection of public health and welfare and demonstrating compliance with applicable ambient air standards and effects screening levels (ESLs), the impacts analysis as specified in subsection (k) of this section must be completed.

(A) All impacts analysis must be done on a contaminant-by-contaminant basis for any net project increases. If a claim under this section is only for planned MSS under subsection (i) of this section, the analysis shall evaluate planned MSS scenarios only.

(B) Hourly and annual emissions shall be limited based on the most stringent of subsections (g), (h), or (k) of this section.

(c) Authorized Facilities, Changes, and Activities.

(1) For existing OGS which are authorized by previous versions of this section.

(A) A project requires registration unless otherwise specified.

(B) The following projects do not require registration, but must comply with best management practices (BMP) in subsection (e) of this section, compliance demonstrations in subsections (i) and (j) of this section, and must be incorporated into the registration at the next revision or certification:

(i) Addition of any piping, fugitive components, any other new facilities, that increase actual emissions less than or equal to 1.0 tpy VOC, 5.0 tpy NO<sub>x</sub>, 0.01 tpy benzene, and 0.05 tpy H<sub>2</sub>S over a rolling 12-month period;

(ii) Changes to any existing facilities that increase certified emissions less than or equal to 1.0 tpy VOC, 5.0 tpy NO<sub>x</sub>, 0.01 tpy benzene, and 0.05 tpy H<sub>2</sub>S over a rolling 12-month period;

(iii) Total increases over a rolling 60-month period of time that are less than or equal to 5.0 tpy VOC or NO<sub>x</sub>, 0.05 tpy benzene, or 0.1 tpy H<sub>2</sub>S;

(iv) Addition of any new engine rated less than 100 horsepower (hp); or

(v) Replacement of any facility if the new facility does not increase the previous actual or certified emissions.

(C) For facilities authorized under §116.111 of this title, only records of MSS as specified in this section must be kept and this section may only be used for planned MSS for the facility types specified in this section.

(2) All authorizations under this section shall meet the following:

(A) new, changed, or replacement facilities shall not exceed the thresholds for major source or major modification as defined in §116.12 of this title

(relating to Nonattainment and Prevention of Significant Deterioration Review Definitions), and in Federal Clean Air Act, §112(g) or §112(j);

(B) all facilities shall comply with all applicable 40 Code of Federal Regulations (CFR), Parts 60, 61, and 63 requirements for New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), and Maximum Achievable Control Technology (MACT); and

(C) all facilities shall comply with all applicable requirements of Chapters 111, of this title (relating to Control of Air Pollution from Visible Emissions and Particulate Matter), 112 of this title (relating to Control of Air Pollution from Sulfur Compounds), 113 of this title (relating to Standards of Performance for Hazardous Air Pollutants and for Designated Facilities and Pollutants), 115 of this title (relating to Control of Air Pollution from Volatile Organic Compounds), and 117 of this title (relating to Control of Air Pollution from Nitrogen Compounds).

(3) To be eligible for this PBR, in addition to the requirements found in §106.4 of this title (relating to Requirements for Permitting by Rule), an applicant:

(A) shall meet all applicable requirements as set forth in this section;

(B) shall not misrepresent or fail to fully disclose all relevant facts in obtaining the permit; and

(C) shall not be indebted to the state for failure to make payment of penalties or taxes imposed by the statutes or rules within the commission's jurisdiction.

(D) Notwithstanding any limitations in §50.131(c) of this title (relating to Purpose and Applicability), a person may file a Motion to Overturn under the procedures set forth in §50.139 of this title (relating to Motion to Overturn Executive Director's Decision) in order to seek commission review of any denial of a PBR for failing to meet the conditions set forth in this paragraph.

(4) This paragraph covers groups of facilities typically associated with wellheads, pump-jacks, Christmas trees, metering stations, and other similar facilities handling or containing crude oil, condensate, natural gas, or a mixture of these materials (examples include, but are not limited to, stripper/marginal wells producing up to 10 barrels of oil equivalent per day, natural gas up to 60,000 cubic feet per day, or high pressure gas wells). The following projects and facilities are authorized and must only comply with subsection (e)(1) and (2) of this section, and applicable portions of subsection (j) of this section:

(A) Claims under this paragraph must include all facilities or groups of facilities at an OGS which are operationally dependent on each other and located within a 1/4 mile of a project emission point, vent, or fugitive component. If piping or fugitive components are the only connection between facilities and the distance between facilities exceeds 1/4 mile, then the facilities are considered separate for purposes of this paragraph.

(B) A site-wide combination of engines which meet the following:

(i) up to 450 hp if fueled by sweet gas;

(ii) up to 100 hp if fueled by sour gas containing not more than 10,000 parts per million by weight (ppmw) H<sub>2</sub>S; or

(iii) up to 20 hp fueled by sour gas containing more than 10,000 ppmw but not more than 50,000 ppmw H<sub>2</sub>S.

(C) For any one of the following combinations of facilities:

(i) only piping and fugitive components handling natural gas up to a maximum of 135 valves, 135 open-ended lines, any combination of connectors

and flanges up to 2,000 components, and 135 component types otherwise not specified;  
or

(ii) only piping and fugitive components handling liquids or gas up to a maximum of 25 valves, 25 open-ended lines, any combination of connectors and flanges up to 2,000 components, and 25 component types otherwise not specified;

(iii) only piping and fugitive components handling liquids or gas up to a maximum of four pump seals; four open-ended lines; and any combination of valves, flanges, and connectors up to 225 components; or

(iv) separators used solely to separate crude oil, condensate, and natural gas (which are routed directly to a sales pipeline) from produced water. Tanks used and handling only produced water up to 1,205 barrels per day. All associated piping and fugitive components up to a maximum of five pump seals; five open-ended lines; and any combination of valves, flanges, and connectors totaling 150 components in VOC service and 500 components in water service; or

(v) separators used solely to separate crude oil, condensate, and natural gas (which are routed directly to a sales pipeline) from produced water. Tanks used and handling only produced water up to 580 barrels per day. All associated

pipng and fugitive components up to a maximum of two pump seals; two open-ended lines; and any combination of valves, flanges, and connectors totaling 230 components in VOC service and 500 components in water service.

(d) Facilities and Exclusions.

(1) Only the following specific facilities and groups of facilities have been evaluated for this PBR, along with supporting infrastructure equipment and facilities, and may be included in a registration for this section:

(A) fugitive components, including valves, pressure relief valves, pipe flanges and connectors, pumps, compressors, stuffing boxes, instrumentation and meters, natural gas driven pneumatic pumps, and other similar devices with seals that separate process and waste material from the atmosphere and the associated piping;

(B) separators, including all gas, oil, and water physical separation units;

(C) treatment and processing equipment, including heater-treaters, methanol injection, glycol dehydrators, molecular or mole sieves, amine sweeteners, H<sub>2</sub>S scavenger chemical reaction vessels for sulfur removal, and iron sponge units;

(D) cooling towers and associated heat exchangers;

(E) gas recovery units, including cryogenic expansion, absorption, adsorption, heat exchangers and refrigeration units;

(F) combustion units, including engines, turbines, boilers, reboilers, and heaters;

(G) storage tanks for crude oil, condensate, produced water, fuels, treatment chemicals, slop and sump oils, and pressure tanks with liquefied petroleum gases;

(H) surface support facilities associated with underground storage of gas or liquids;

(I) truck loading equipment;

(J) control equipment, including vapor recovery systems, glycol and amine reboilers, condensers, flares, vapor combustors, and thermal oxidizers; and

(K) temporary facilities used for planned maintenance, and temporary control devices for planned startups and shutdowns.

(2) Exclusions. The following are not authorized under this section:

(A) sour water strippers or sulfur recovery units;

(B) carbon dioxide hot carbonate processing units;

(C) water injection facilities. These facilities may otherwise be authorized by §106.351 of this title (relating to Salt Water Disposal (Petroleum));

(D) liquefied petroleum gases, crude oil, or condensate transfer or loading into or from railcars, ships, or barges. These facilities may otherwise be authorized by §106.261 of this title (relating to Facilities (Emission Limitations)) and §106.262 of this title (relating to Facilities (Emission and Distance Limitations));

(E) incinerators for solid waste destruction;

(F) remediation of petroleum contaminated water and soil. These facilities may otherwise be authorized by §106.533 of this title (relating to Remediation); and

(G) cooling towers and heat exchangers with direct contact with gaseous or liquid process streams containing VOC, H<sub>2</sub>S, halogens or halogen compounds, cyanide compounds, inorganic acids, or acid gases.

(e) BMP and Minimum Requirements. For any new project, and any associated emission control equipment registered under this section, paragraphs (1) - (5) of this subsection shall be met as applicable. These requirements are not applicable to existing, unchanging facilities. Equipment design and control device requirements listed in paragraphs (6) - (12) of this subsection only apply to those that are chosen by the operator to meet the limitations of this section.

(1) All facilities which have the potential to emit air contaminants must be maintained in good working order and operated properly during facility operations. Each operator shall establish and maintain a program to replace, repair, and/or maintain facilities to keep them in good working order. The minimum requirements of this program shall include:

(A) Compliance with manufacturer's specifications and recommended programs applicable to equipment performance and effect on emissions, or alternatively, an owner or operator developed maintenance plan for such equipment that is consistent with good air pollution control practices;

(B) cleaning and routine inspection of all equipment; and

(C) replacement and repair of equipment on schedules which prevent equipment failures and maintain performance.

(2) Any facility shall be operated at least 50 feet from any property line or receptor (whichever is closer to the facility). ~~This distance limitation does not apply as specified in subparagraphs (A)–(C) of this paragraph. Compliance with local set back ordinances with distance requirements greater than or equal to 50 feet between the facility and a receptor satisfies all separation requirements of this paragraph. [This distance limitation does not apply to the following:]~~

(A) any fugitive components that are used for isolation and/or safety purposes may be located at 1/2 of the width of any applicable easement;

(B) any facility at a location for which the distance requirements were satisfied at the time this section is claimed, registered, or certified (provided that the authorization was maintained) regardless of whether a receptor is subsequently built or put to use less than 50 feet from any OGS facility; or

(C) existing facilities which are located less than 50 feet from a property line or receptor when constructed and previously authorized. If modified or replaced the operator shall consider, to the extent that good engineering practice will permit, moving these facilities to meet the 50-foot requirement. Replacement facilities must meet all other requirements of this section.

(3) Engines and turbines shall meet the emission and performance standards listed in Table 6 in subsection (m) of this section and the following requirements:

(A) liquid fueled engines used for back-up power generation and periodic power needs at the OGS are authorized if the fuel has no more than 0.05% sulfur and the engine is operated less than 876 hours per rolling 12-month period;

(B) engines and turbines used for electric generation more than 876 hours per rolling 12-month period are authorized if no reliable electric service is readily

available and Table 6 in subsection (m) of this section is met. In all other circumstances, electric generators must meet the technical requirements of the Air Quality Standard Permit for Electric Generating Unit (EGU) (not including the EGU standard permit registration requirements) and the emissions shall be included in the registration under this section;

(C) all applicable requirements of Chapter 117 of this title (relating to Control of Air Pollution from Nitrogen Compounds);

(D) all applicable requirements of 40 CFR Parts 60 and 63; and

(E) compression ignition engines that are rated less than 225 kilowatts (300 hp) and emit less than or equal to the emission tier for an equivalent-sized model year 2008 non-road compression ignition engine located at 40 CFR §89.112, Table 1 are authorized.

(4) Open-topped tanks or ponds containing VOCs or H<sub>2</sub>S are allowed up to a potential to emit equal to 1.0 tpy of VOC and 0.1 tpy of H<sub>2</sub>S.

(5) The following shall apply to all fugitive components at the site associated with the project:

(A) All components shall be physically inspected quarterly for leaks.

(B) All components found to be leaking shall be repaired. Every reasonable effort shall be made to repair a leaking component. All leaks not repaired immediately shall be tagged or noted in a log. At manned sites, leaks shall be repaired no later than 30 days after the leak is found. At unmanned sites, leaks shall be repaired no later than 60 days after the leak is found. If the repair of a component would require a unit shutdown, which would create more emissions than the repair would eliminate, the repair may be delayed until the next shutdown.

(C) Tank hatches, not designed to be completely sealed, shall remain closed (but not completely sealed in order to maintain safe design functionality) except for sampling, gauging, loading, unloading, or planned maintenance activities.

(D) To the extent that good engineering practices will permit, new and reworked valves and piping connections shall be located in a place that is reasonably accessible for leak checking during plant operation. Underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.

(6) When leak detection and repair (LDAR) fugitive monitoring is chosen by the operator, Table 9, in subsection (m) of this section, shall apply. In addition, all components shall be physically inspected at least weekly by operating personnel walk-through.

(7) Tanks and vessels that utilize a paint color to minimize the effects of solar heating (including, but not limited to, white or aluminum):

(A) to meet this requirement the solar absorptance should be 0.43 or less, as referenced in Table 7.1 - 6 in Compilation of Air Pollutant Emission Factors (AP-42);

(B) paint shall be applied according to paint producers recommended application requirements if provided and in sufficient quantity as to be considered solar resistant;

(C) paint coatings shall be maintained in good condition and will not compromise tank integrity. Minimal amounts of rust may be present not to exceed 10% of the external surface area of the roof or walls of the tank and in no way may compromise tank integrity. Additionally, up to 10% of the external surface area of the

roof or walls of the tank or vessel may be painted with other colors to allow for identification and/or aesthetics;

(D) for tanks and vessels purposefully darkened to create the process reaction and help condense liquids from being entrained in the vapor or are in an area whereby a local, state, federal law, ordinance, or private contract predating this section's effective date establishes in writing tank and vessel colors other than white, these requirements do not apply.

(8) All emission estimation methods including but not limited to computer programs such as GRI-GLYCalc, AmineCalc, E&P Tanks, and Tanks 4.0, must be used with monitoring data generated in accordance with Table 8 in subsection (m) of this section where monitoring is required. All emission estimation methods must also be used in a way that is consistent with protocols established by the commission or promulgated in federal regulations (NSPS, NESHAPS). Where control is relied upon to meet subsection (k) of this section, control monitoring is required.

(9) Process reboilers, heaters, and furnaces that are also used for control of waste gas streams:

(A) may claim 50% to 99% destruction efficiency for VOCs and H<sub>2</sub>S depending on the design and level of monitoring applied. The 90% destruction may be claimed where the waste gas is delivered to the flame zone or combustion fire box with basic monitoring as specified in subsection (j) of this section. Any value greater than 90% and up to 99% destruction efficiency may be claimed where enhanced monitoring and/or testing are applied as specified in subsection (j) of this section;

(B) if the waste gas is premixed with the primary fuel gas and used as the primary fuel in the device through the primary fuel burners, 99% destruction may be claimed with basic monitoring as specified in subsection (j) of this section;

(C) in systems where the combustion device is designed to cycle on and off to maintain the designed heating parameters, and may not fully utilize the waste gas stream, records of run time and enhanced monitoring are required to claim any run time beyond 50%.

(10) Vapor recovery Units (VRUs) may claim up to 100% control. The control efficiency is based on whether it is a mechanical VRU (mVRU) or a liquid VRU (lVRU). The VRUs must meet the appropriate design, monitoring, and recordkeeping in Table 7 and Table 8 in subsection (m) of this section.

(11) Flares used for control of emissions from production, planned MSS, emergency, or upset events may claim design destruction efficiency of 98%. 99% may be claimed for destruction of compounds containing only carbon, hydrogen, and oxygen with no more than three carbon atoms. All flares must be designed and operated in accordance with the following:

(A) meet specifications for minimum heating values of waste gas, maximum tip velocity, and pilot flame monitoring found in 40 CFR §60.18;

(B) if necessary to ensure adequate combustion, sufficient gas shall be added to make the gases combustible;

(C) an infrared monitor is considered equivalent to a thermocouple for flame monitoring purposes;

(D) an automatic ignition system may be used in lieu of a continuous pilot;

(E) flares must be lit at all times when gas streams are present;

(F) fuel for all flares shall be sweet gas or liquid petroleum gas except where only field gas is available and it is not sweetened at the site; and

(G) flares shall be designed for and operated with no visible emissions, except for periods not to exceed at total of five minutes during any two consecutive hours. Acid gas flares which must comply with opacity limits and records in accordance with §111.111(a)(4) of this title (relating to Requirements for Specified Sources), regarding gas flares, are exempt from this visible emission limitation.

(12) Thermal oxidation and vapor combustion control devices:

(A) may claim design destruction efficiency from 90% to 99.9% for VOCs and H<sub>2</sub>S depending on the design and the level of monitoring and testing applied;

(B) a device designed for the variability of the waste gas streams it controls with basic monitoring to indicate oxidation or combustion is occurring when waste gas is directed to the device may claim 90% destruction efficiency;

(C) devices with intermediate monitoring, designed for the variability of the waste gas streams they control, with a fire box or fire tube designed to maintain a temperature above 1,400 degrees Fahrenheit (F) for 0.5 seconds, residence

time; or designed to meet the parameters of a flare with minimum heating values of waste gas, maximum tip velocity, and pilot flame monitoring as found in 40 CFR §60.18, but within a full or partial enclosure may claim a design destruction efficiency of 90% to 98%;

(D) devices with enhanced monitoring and ports and platforms to allow stack testing may claim a 99% efficiency where the devices are designed for the variability of the waste gas streams they control, with a fire box or fire tube designed to maintain a temperature above 1,400 degrees F for 0.5 seconds, residence time;

(E) devices that can claim 99% destruction efficiency may claim 99.9% destruction efficiency if stack testing is conducted and confirms the efficiency and the enhanced monitoring is adjusted to ensure the continued efficiency. Temperature and residence time requirements may be modified if stack testing is conducted to confirm efficiencies.

(f) Notification, Certification, and Registration Requirements.

(1) For all previous claims of this section (or any previous version of this section) existing authorized facilities, or group of facilities, identified in subsection (b)(7) of this section must submit a notification no later than January 5, 2015 [January

1, 2013]. Facilities or groups of facilities which meet subsection (c)(4) of this section do not have to meet the following notification requirements:

(A) For actively operating facilities which have never been registered with the commission, submit updated Core Data and basic identifying information (previously claimed historical versions of this section and lease name or well numbers as provided to the Texas Railroad Commission) through ePermits using the "APD OGS Historical Notification."

(B) For those facilities which have previously registered with the commission and updates are needed to the commission's Central Registry (CR), submit a hard copy of a Core Data Form with an attachment listing identifying information (previously claimed historical versions of this section and lease name or well numbers as provided to the Texas Railroad Commission). If no updates to CR are required, no further action is needed.

(C) No fee is required for this notification.

(2) If no other changes, except for authorizing planned MSS, occur at an existing site under this section, or any previous version of this section, the following apply no later than January 5, 2012:

(A) Records demonstrating compliance with subsection (i) of this section must be kept;

(B) If the existing OGS is certified, an addendum to the OGS certification may be filed using Form APD-CERT. No fee is required for this updated certification; and

(C) Planned MSS does not require registration if no other project is occurring, and shall be incorporated at the next revision or update to a registration under this section after January 5, 2012.

(3) For facilities authorized under §116.111 of this title, only records of MSS as specified in this section must be kept. Planned MSS shall be incorporated into the permit at the next permit renewal or amendment after January 5, 2012.

(4) Prior to construction or implementation of changes for any project which meets this section, a notification shall be submitted through the ePermits system. This notification shall include the following:

(A) Identifying information (Core Data) and a general description of the project must be submitted through ePermits (or if not available, hard-copy) using the "APD OGS New Project Notification."

(B) A fee of \$25 for small businesses (as defined in §106.50 of this title (relating to Registration Fees for Permits by Rule), or \$50 for all others must be submitted through the commission's ePay system.

(5) For any registration which meets the emission limitations of Level 1 as required in subsection (g) of this section:

(A) Within 180 days after start of operation or implemented changes (whichever occurs first), the facilities must be registered through ePermits form "APD OGS PBR Level 1 and 2 Registration" (or if not available, submittal of hard-copy).

(B) This registration shall include a detailed summary of maximum emissions estimates based on:

(i) site-specific or defined representative gas and liquid analysis;

(ii) equipment design specifications and operations;

(iii) material type and throughput;

(iv) other actual parameters essential for accuracy for determining emissions; and

(v) documentation demonstrating compliance with all applicable requirements of this section.

(C) The fee for this registration shall be \$25 for small businesses, as defined in §106.50 of this title, or \$175 for all others.

(6) For any registration which meets the emission limitations of Level 2 as required in subsection (h) of this section:

(A) Within 90 days after start of operation or implemented changes (whichever occurs first), the facilities must be registered through ePermits form "APD OGS PBR Level 1 and 2 Registration" (or if not available, submittal of hard-copy).

(B) This registration shall include a detailed summary of maximum emissions estimates based on:

(i) site-specific or defined representative gas and liquid analysis;

(ii) equipment design specifications and operations;

(iii) material type and throughput; and

(iv) other actual parameters essential for accuracy for determining emissions and compliance with all applicable requirements of this section.

(C) The fee for this registration shall be \$75 for small businesses (as defined in §106.50 of this title) or \$400 for all others.

(7) Certified registrations or certifications are required in the following circumstances:

(A) For projects at existing major sites, establish emission increases less than any applicable threshold or contemporaneous emission increases for major sources or major modifications under prevention of significant deterioration (PSD),

nonattainment new source review (NNSR) as specified in §116.12 of this title and in Federal Clean Air Act §112(g), §112(j), or the definition of major source in §122.10 of this title.

(B) If a project or registration includes control for reductions, limited hours, throughput, and materials or other operational limitations which are less than the potential to emit, and if modeling is used to demonstrate compliance with subsection (k) of this section.

(C) If a project is located at a site subject to NO<sub>x</sub> cap and trade requirements in Chapter 101, Subchapter H of this title (relating to Emissions Banking and Trading) or relies on controls to comply with any state or federal regulation.

(D) For projects which resolve compliance issues and are the result of a commission or United States Environmental Protection Agency order.

(8) If the ePermits system is not available for more than 24 hours or not otherwise accessible, hard copies of notifications, registrations, or certifications may be submitted by first-class mail.

(9) If emissions increase at an OGS to a level where it exceeds its current authorization, either through a change in production or addition of facilities, the site may claim and register its facilities under the applicable authorization (Level 1 or Level 2 PBR or Standard Permit) as follows:

(A) Within 90 days from the initial notification of construction of an oil and gas facility, a registration can update the authorization mechanism by submitting a revision to the PBR or an application for a standard permit; and

(B) Within 90 days of the change of production or installation of additional equipment, a revision to the PBR or an application for a standard permit has been submitted.

(g) Level 1 Requirements. Total maximum estimated emissions shall meet the most stringent of the following. All emissions estimates must be based on representative worst-case operations and planned MSS activities.

(1) Emissions of any criteria air contaminant shall not exceed the applicable limits for a major stationary source or major modification for PSD, NNSR and in Federal Clean Air Act, §112(g), §112(j), or the definition of major source in §122.10 of this title.

(2) Emissions must meet the limitations established in subsection (k) of this section.

(3) Maximum emissions are limited to less than the following after any operator limitations or controls:

**Figure: 30 TAC §106.352(g)(3) (No change to the figure as it currently exists in TAC.)**

(h) Level 2 Requirements. If the requirements of Level 1 cannot be met, then the conditions of this subsection must be followed. Total maximum estimated registered or certified emissions shall meet the most stringent of the following. All emissions estimates must be based on representative worst-case operations and planned MSS activities.

(1) Total maximum estimated annual emissions of any air contaminant shall not exceed the applicable limits for a major stationary source or major modification for PSD and NNSR as specified in §116.12 of this title.

(2) Emissions must meet the limitations established in subsection (k) of this section.

(3) Maximum emissions are limited to less than the following after any operator limitations or controls:

**Figure: 30 TAC §106.352(h)(3) (No change to the figure as it currently exists in TAC.)**

(i) Planned Maintenance, Startups and Shutdowns. For any facility, group of facilities or site using this section or previous versions of this section, the following shall apply.

(1) Prior to January 5, 2012, representations and registration of planned MSS is voluntary, but if represented must meet the applicable limits of this section. After January 5, 2012, all emissions from planned MSS activities and facilities must be considered for compliance with applicable limits of this section. This section may not be used at a site or for facilities authorized under §116.111 of this title if planned MSS has already been authorized under that permit.

(2) As specified, releases of air contaminants during, or as result of, planned MSS must be quantified and meet the emission limits in this section, as applicable. This analysis must include:

- (A) alternate operational scenarios or redirection of vent streams;
- (B) pigging, purging, and blowdowns;
- (C) temporary facilities if used for degassing or purging of tanks, vessels, or other facilities;
- (D) degassing or purging of tanks, vessels, or other facilities; and
- (E) management of sludge from pits, ponds, sumps, and water conveyances.

(3) Other planned MSS activities authorized by this section are limited to the following. These planned MSS activities require only recordkeeping of the activity.

(A) Routine engine component maintenance including filter changes, oxygen sensor replacements, compression checks, overhauls, lubricant changes, spark plug changes, and emission control system maintenance.

(B) Boiler refractory replacements and cleanings.

(C) Heater and heat exchanger cleanings.

(D) Turbine hot section swaps.

(E) Pressure relief valve testing, calibration of analytical equipment; instrumentation/analyzer maintenance; replacement of analyzer filters and screens.

(4) Engine/compressor startups associated with preventative system shutdown activities have the option to be authorized as part of typical operations if:

(A) prior to operation, alternative operating scenarios to divert gas or liquid streams are registered and certified with all supporting documentation;

(B) engine/compressor shutdowns shall result in no greater than 4 lb/hr of natural gas emissions; and

(C) emissions which result from the subsequent compressor startup activities are controlled to a minimum of 98% efficiency for VOC and H<sub>2</sub>S.

(j) Records, sampling, and monitoring. The following records shall be maintained at a site in written or electronic form and be readily available to the agency or local air pollution control program with jurisdiction upon request. All required records must be kept at the facility site. If the facility normally operates unattended, records must be maintained at an office within Texas having day-to-day operational control of the plant site. Other requirements, including but not limited to, federal recordkeeping or testing requirements, can be used to demonstrate compliance if the other requirements are at least as stringent as the associated requirements in the Tables 7 and 8 in subsection (m) of this section. Any documentation that is already being kept for other purposes will suffice for demonstrating requirements. If a control or method is not relied upon for emission reductions, then the associated sampling, monitoring, and records are not applicable.

(1) Sampling and demonstrations of compliance shall include the requirements listed in Table 7 in subsection (m) of this section.

(2) Monitoring and records for demonstrations of compliance shall include the requirements listed in Table 8 in subsection (m) of this section.

(k) Emission limits based on impacts evaluation.

(1) All impacts evaluations must be completed on a contaminant-by-contaminant basis for any net emissions increases resulting from a project and must meet the following as appropriate:

(A) Compliance with state or federal ambient air standards shall be demonstrated for nitrogen dioxide (NO<sub>2</sub>), SO<sub>2</sub>, and H<sub>2</sub>S at any property-line within 1/4 mile or 1/2 mile of a project under subsection (g) (Level 1) or subsection (h) (Level 2) of this section, respectively.

(B) Compliance with hourly ESLs for benzene and annual ESL for benzene, shall be demonstrated at the nearest receptor within 1/4 mile or 1/2 mile of a project under subsection (g) (Level 1) or subsection (h) (Level 2) of this section, respectively.

(2) Distance measurements shall be determined using the following.

(A) For each facility or group of facilities, the shortest corresponding distance from any emission point, vent, or fugitive component to the nearest receptor must be used with the appropriate compliance determination method with the published ESLs as found through the TCEQ [commissioner's] internet Web page.

(B) For each facility or group of facilities, the shortest corresponding distance from any emission point, vent, or fugitive component to the nearest property line must be used with the appropriate compliance determination method with any applicable state or federal ambient air quality standard.

(3) Impacts evaluations are not required under the following cases:

(A) If there is no receptor within 1/4 mile of a Level 1 registration, or 1/2 mile of a Level 2 registration, no further ESL review is required.

(B) If there is no property line within 1/4 mile of a Level 1 registration, or 1/2 mile of a Level 2 registration, no further ambient air quality standard review is required.

(C) If the project total emissions are less than any of the following rates, no additional analysis or demonstration of the specified air contaminant is required:

**Figure: 30 TAC §106.352(k)(3)(C) (No change to the figure as it currently exists in TAC.)**

(4) Evaluation of emissions shall meet the following.

(A) For all evaluations of NO<sub>x</sub> to NO<sub>2</sub>, a conversion factor of 0.20 for 4-stroke rich and lean-burn engines and 0.50 for 2-stroke lean-burn engines may be used.

(B) The maximum predicted concentration or rate at the property boundary or receptor, whichever is appropriate, must not exceed a state or federal ambient air standard or ESL.

(5) The impacts analysis shall be based on the following facility emissions.

(A) The following shall be met for ESL reviews:

(i) If a project's air contaminant maximum predicted concentrations are equal to or less than 10% of the appropriate ESL, no further review is required.

(ii) If a project's air contaminant maximum predicted concentrations combined with project increases for that contaminant over a 60-month

period after the effective date of this revised section are equal to or less than 25% of the appropriate ESL, no further review is required.

(iii) In all other cases, all facility emissions at an OGS, regardless of authorization type, located within 1/4 mile of a project requiring registration under this section shall be evaluated.

(B) The following shall be met for state and federal ambient air quality standard reviews:

(i) If a project's air contaminant maximum predicted concentrations are equal to or less than the significant impact level (also known as *de minimis* impact in Chapter 101 of this title (relating to General Air Quality Rules)), no further review is required;

(ii) In all other cases, all facility emissions at an OGS, regardless of authorization type, located within 1/4 mile of a project requiring registration under this section shall be evaluated.

(6) Evaluation must comply with one of the methods listed with no changes or exceptions.

(A) Tables.

(i) Emission impact Tables 2 - 5F in subsection (m) of this section, may be used in accordance with the limits and descriptions in Table 1 in subsection (m) of this section.

(ii) Values in Tables 2 - 5F in subsection (m) of this section may be used with linear interpolation between height and distance points. A distance of less than 50 feet or greater than 5,500 feet may not be used. Release heights may not be extrapolated beyond the limits of any table and instead the minimum or maximum height will be used. If distances and release heights are not interpolated, the next lowest height and lesser distances shall be used for determination of maximum acceptable emissions. All facilities exempted from the distance to the property line restriction in subsection (e)(2) of this section must use 50 feet as the distance to the property line for those ambient standards based on property line.

(B) Screening Modeling. A screening model may be used to demonstrate acceptable emissions from an OGS under this section if all of the parameters in the screening modeling protocol provided by the commission are met.

(C) Dispersion Modeling. A refined dispersion model may be used to demonstrate acceptable emissions from an OGS under this section if all of the parameters in the refined dispersion modeling protocol provided by the commission are met.

(l) The requirements in this subsection are applicable to new and modified facilities except those specified in subsection (a)(1) of this section. Any oil or gas production facility, carbon dioxide separation facility, or oil or gas pipeline facility consisting of one or more tanks, separators, dehydration units, free water knockouts, gunbarrels, heater treaters, natural gas liquids recovery units, or gas sweetening and other gas conditioning facilities, including sulfur recovery units at facilities conditioning produced gas containing less than two long tons per day of sulfur compounds as sulfur are permitted by rule, provided that the following conditions of this subsection are met. This subsection applies only to those facilities named which handle gases and liquids associated with the production, conditioning, processing, and pipeline transfer of fluids found in geologic formations beneath the earth's surface.

(1) Compressors and flares shall meet the requirements of §106.492 and §106.512 of this title (relating to Flares; and Stationary Engines and Turbines, respectively). Oil and gas facilities which are authorized under historical standard

exemptions and remain unchanged maintain that authorization and the remainder of this subsection does not apply.

(2) Total emissions, including process fugitives, combustion unit stacks, separator, or other process vents, tank vents, and loading emissions from all such facilities constructed at a site under this subsection shall not exceed 25 tpy each of SO<sub>2</sub>, all other sulfur compounds combined, or all VOCs combined; and 250 tpy each of NO<sub>x</sub> and CO. Emissions of VOC and sulfur compounds other than SO<sub>2</sub> must include gas lost by equilibrium flash as well as gas lost by conventional evaporation.

(3) Any facility handling sour gas shall be located at least one-quarter mile from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facility or the owner of the property upon which the facility is located.

(4) Total emissions of sulfur compounds, excluding sulfur oxides, from all vents shall not exceed 4.0 pounds per hour (lb/hr) and the height of each vent emitting sulfur compounds shall meet the following requirements, except in no case shall the height be less than 20 feet, where the total emission rate as H<sub>2</sub>S, lb/hr, and minimum vent height (feet), and other values may be interpolated:

(A) 0.27 lb/hr at 20 feet;

(B) 0.60 lb/hr at 30 feet;

(C) 1.94 lb/hr at 50 feet;

(D) 3.00 lb/hr at 60 feet; and

(E) 4.00 lb/hr at 68 feet.

(5) Before operation begins, facilities handling sour gas shall be registered with the executive director [commission's Office of Permitting and Registration] in Austin using Form PI-7 along with supporting documentation that all requirements of this subsection will be met. For facilities constructed under §106.353 of this title (relating to Temporary Oil and Gas Facilities), the registration is required before operation under this subsection can begin. If the facilities cannot meet this subsection, a permit under Chapter 116 of this title (relating to Control of Air Pollution by Permits for New Construction or Modification) is required prior to continuing operation of the facilities.

(m) The following tables shall be used as required in this section.

**Figure: 30 TAC §106.352(m) (No change to the figure as it currently exists in TAC.)**

# **Air Quality Standard Permit for Oil and Gas Handling and Production Facilities**

*Note for all Readers: Acronym List at End of Document*

## **I. Executive Summary**

The Texas Commission on Environmental Quality (TCEQ or commission) is issuing amendments to the Air Quality Standard Permit for Oil and Gas Handling and Production Facilities. Facilities currently registered under the standard permit will not be required to comply with the amendments until the existing registration comes up for renewal.

## **II. Explanation and Background of Air Quality Standard Permit**

On January 26, 2011 the commission issued a non-rule Air Quality Standard Permit for Oil and Gas Handling and Production Facilities. Subsections (a) - (k) of the standard permit consist of updated control, monitoring, and reporting requirements that apply in 23 counties of North Central Texas (Archer, Bosque, Clay, Comanche, Cooke, Coryell, Dallas, Denton, Eastland, Ellis, Erath, Hill, Hood, Jack, Johnson, Montague, Palo Pinto, Parker, Shackelford, Stephens, Somervell, Tarrant, and Wise) commonly known as the Barnett Shale Region. Subsection (l) references the requirements in Title 30, Texas Administrative Code (30 TAC) §116.620 and applies to the remainder of the state's counties. The commission also adopted a new 30 TAC §106.352, and subsections (a) - (k) of this rule also apply in the Barnett Shale counties.

The standard permit was the result of an ongoing, multi-phased evaluation of permits by rule (PBR) and standardized authorizations (standard permits). The goals of this evaluation include: updating administrative and technical requirements; making appropriate changes to registration or notification requirements; ensuring that air emissions from specific facilities are protective of public health and welfare; including practically enforceable recordkeeping requirements; and allowing the commission to more effectively focus resources on facilities that significantly contribute air contaminants to the atmosphere. To accomplish these goals, the commission provided a minimum setback of oil and gas facilities from receptors and property lines and a method of updating its inventory of existing facilities. Through this evaluation, the commission determined a need to significantly revise the standard permit in § 116.620 and the PBR for oil and gas facilities or groups of facilities at a site, which resulted in the January 26, 2011 adoption of the nonrule standard permit and of §106.352.

Updating this standard permit and §106.352 was particularly critical for oil and gas facilities in urban locations or in close proximity to the public, and was adopted primarily to better regulate emissions from the production of oil and natural gas in the Barnett Shale region.

The designation of the Barnett Shale region counties was based on the underlying geologic formation as recognized by the Texas Railroad Commission (RRC), the high volume of current and potential drilling sites, and their close proximity to dense urban populations. The implementation of the non-rule standard permit in the Barnett Shale region gave the commission an opportunity to evaluate its administration in the area of the state that presented the most immediate challenge. These amendments to the non-rule standard permit are a result of the ongoing evaluation. The non-rule standard permit has been in effect for facilities constructed since April 1, 2011, and the commission has had the opportunity to evaluate its appropriateness based on population density, the total number and concentration of Barnett Shale formation drilling and producing oil and gas facilities near population centers, and monitoring and compliance records.

### **III. Overview of Air Quality Standard Permit**

The standard permit includes operating specifications and emissions limitations for typical equipment and facilities used during normal operation, which includes production and planned maintenance, startup, and shutdown (MSS). The standard permit references the federal standards which have been promulgated by the United States Environmental Protection Agency (EPA), and includes criteria for registration and changes at existing, authorized sites. It also specifically addresses the appropriateness of multiple authorizations at one contiguous property.

### **IV. Permit Condition Analysis and Justification**

As stated in the preamble from the January 26, 2011 adoption, the commission determined that this standard permit should apply to the area of the state with the greatest number of new or modified facilities located in close proximity to the greatest number of residents. The commission amends section (a)(1) of this standard permit to remove Archer, Bosque, Coryell, Clay, Comanche, Eastland, Shackelford, and Stephens counties from the applicability of subsections (a) - (k). Subsection (l) would then apply to the removed counties. Using data from the RRC, the commission evaluated oil and gas operations in the Barnett Shale counties based on population density and the total number and concentration of Barnett Shale drilling and producing facilities in close proximity to population centers.

The commission has examined monitoring and enforcement data in the removed counties to confirm that no ambient air quality standards are threatened and that there are no ongoing rule compliance problems. The commission has analyzed the drilling and production activity in Archer, Bosque, Clay, Comanche, Coryell, Eastland, Shackelford, and Stephens counties, and the commission removes these counties based primarily on the relatively low density of Barnett Shale oil and gas facilities near the associated population centers.

The commission has complied with the applicable requirements of Senate Bill (SB) 1134, 82<sup>nd</sup> Legislature which requires evaluation of four criteria before adopting or amending a permit by rule or standard permit. First, the legislation requires a regulatory analysis as provided by Texas Government Code, §2001.0225. The commission has performed this analysis in accordance with its established procedures for rulemaking and concluded that this standard permit amendment is not a major environmental rule, because it does not affect the economy of the state or a portion of the state in a material way. The second and third criteria involve an evaluation of air quality monitoring and modeling data to establish any emissions limits or emissions related requirements. This amended standard permit does not establish or revise any emissions limit or emissions related requirements. Therefore, the commission has determined that these criteria are not applicable. However, the commission has examined monitoring data from the removed counties and has determined that the requirements of subsection (l) of this standard permit will ensure that the purposes of the Texas Clean Air Act are not contravened and that there will be no threat to public health. Fourth, the commission is required to consider whether the requirements of a permit should be imposed only on facilities that are located in a particular geographic region of the state. The commission has complied with this requirement, considering whether the requirements of subsections (a) - (k) of this standard permit can be made applicable to a smaller geographic region of the state. Oil and gas facilities in the removed counties are instead required to comply with subsection (l) of this standard permit, applicable to non-Barnett Shale counties.

The commission amends section (c) to correct typographical numbering errors.

The commission amends section (d)(2)(B) to correct the spelling of carbonate.

The commission amends subsection (d)(2)(C) and (F) of this standard permit to correct a typographical error in each subparagraph by inserting the word “be” between the words “otherwise” and “authorized” in both subsections.

The commission **proposed amending** amends subsection (e)(2) of this standard permit to account for local ordinances which require an equal or greater separation of oil and gas facilities from a receptor, **in order to**. ~~The Barnett Shale region contains some areas of significant population density and significant concentrations of drilling and production. Local governments may determine that specific conditions within their jurisdiction require a greater setback to ensure the protection of their citizens. This amendment clarifies the measurement of minimum distance requirements of subsection (e)(2), where such a local ordinance exists, requiring equal or greater set-back distances from receptors. This amendment requires no additional separation should such a local ordinance exist, and the commission would consider compliance with the ordinance to meet both the separation required from a receptor and a property line as stated in subsection (e)(2). This revision will provide flexibility for operators located in urban areas, on small well pad sites, with difficulty meeting property line distance limitations while ensuring continued protection of the human health and the~~

environment. However, in order to avoid unintended interpretations, the commission is not adopting the proposed amendment to subsection (e)(2). The subsection will read as it did before the proposed amendment.

The commission also amends subsection (e)(2)(B) of this standard permit to add the words “less than” between the word “use” and the number “50” since an existing separation of 50 feet would require no action from the oil and gas owner or operator.

The commission amends section (e)(11) to correct typographical numbering errors.

The commission amends table 1 to correct typographical capitalization errors.

The commission amends table 8 to remove repeated text.

The commission amends table 9 to correct typographical spelling of inserts, condensers, whichever, and aesthetic. The commission also corrects units from MBtu/hr to MMBtu/hr, and removes repeated text.

The commission amends subsection (k)(2)(A) of this standard permit to refer to the TCEQ internet web page instead of the “commissioner’s internet web page.”

Facilities currently registered under the standard permit will not be required to comply with the amendments until the existing registration comes up for renewal.

## **V. Protectiveness Review**

None of the conditions affecting protectiveness are being changed in this amendment; therefore a protectiveness review is not required.

## **VI. Public Notice and Comment Period**

In accordance with 30 TAC §116.603, Public Participation in Issuance of Standard Permits, the TCEQ published notice of the proposed standard permit in the *Texas Register* and newspapers of the largest general circulation in the following metropolitan areas: Austin, Dallas, and Houston. The date for these publications was June 1, 2012. The public comment period ran from the date of publication until July 16, 2012.

## **VII. Public Meeting**

A public meeting was held on the proposed amendments to the Air Quality Standard Permit for Oil and Gas Handling and Production Facilities on July 10, 2012, and no comments were submitted.

## VIII. Analysis of Comments

The commission received comments from Texas Representative Lon Burnam, an individual, the Texas Alliance of Energy Producers (TAEP), the Texas Oil & Gas Association (TxOGA), and the Texas Pipeline Association (TPA). The commission also received a comment from Duggins, Wren, Mann & Romero, LLP which was submitted after the close of the comment period.

### *Removal of counties from applicability of subsections (a)-(k)*

Representative Lon Burnam commented that "the agency has not met the requirements of Sec. 382.051961(b), Health and Safety Code, regarding certain analyses and evaluations that must be made prior to amending an existing permit by rule or standard permit." Representative Burnam commented that the Health and Safety Code requires that any revised emission limits be based on the evaluation of air quality monitoring and modeling data, and that removing the eight counties from applicability of subsections (a)-(k) does revise emission limits applicable to oil and gas facilities in those counties.

**The commission has not made changes to the standard permit based on this comment. This rulemaking does not establish or revise any emissions limit or emissions related requirement of subsections (a)-(k) or (l). The removal of the applicability of subsections (a)-(k) to facilities in the eight counties is not a revised emission limit. All counties in Texas that are not included as Barnett Shale counties are included in subsection (l). The initial designation of the Barnett Shale Region counties was based on the underlying geologic formation as recognized by the Texas Railroad Commission (RRC), the high volume of current and potential drilling sites, and the close proximity of those sites to dense, urban populations. The commission has had the opportunity to evaluate facilities in the affected counties based on population density, the total number and concentration of Barnett Shale formation drilling and producing oil and gas facilities near population centers, and monitoring and compliance records. The monitoring and compliance records confirm that no ambient air quality standards are threatened and that there are no ongoing rule compliance problems, given the relatively low density of Barnett Shale oil and gas facilities near the associated population centers. The commission has determined that subsection (l) is a more appropriate authorization for the referenced eight counties, and the requirements will ensure that the purposes of the Texas Clean Air Act are not contravened and there will be no threat to public health.**

Representative Burnam commented that this rulemaking "appears to meet the statutory definition of a major environmental rule. The definition of a Major Environmental Rule in Sec. 2001.0225(g)(3), Government Code, is not limited to rules which 'affect the economy of the state or a portion of the state in a material way,' as the agency states. The definition also applies to rules 'that may adversely affect the environment, or the public health and safety of the state or a sector of

the state. Therefore, I believe the agency must conduct the analysis required under Sec.2001.0225(b) before moving forward with this rule project."

**The commission has not made changes to the rule based on this comment. As discussed in the Final Regulatory Impact Analysis Determination, the commission performed this analysis in accordance with its established procedures for rulemaking consistent with the requirements of §2001.0225, and concluded this rulemaking is not a major environmental rule. Specifically, the commission concluded this is not a major environmental rule because it does not affect the economy of the state or a portion of the state in a material way. Removing the eight counties from the applicability of (a)-(k) and therefore subjecting them to (l), will not adversely affect the environment and will ensure the protection of public health and safety, as it does for the rest of the counties in Texas.**

An individual opposed removal of any counties from the applicability of subsections (a)-(k).

**The commission appreciates the individual's participation in the rulemaking process. The comment did not include justification on why the individual did not want the counties removed and the commission has not changed the rule in response to this comment.**

TAEP, TxOGA, and TPA support the removal of the eight counties from the applicability of subsections (a)-(k). TAEP and TPA supported removal based on low production rates as well as low population density.

**The commission appreciates the support.**

#### *Distance Measurement*

Representative Burnam supported the change to §106.352(e)(2), regarding the clarification on distance requirements when a local ordinance requires a distance equal or greater than 50 feet. TxOGA also supported the change as it related to recognition of local ordinances for set-back distances that already meet the 50 feet minimum distance.

**The commission appreciates the support. However, in order to avoid unintended interpretations, the commission is not adopting the proposed amendment to subsection (e)(2). The subsection will read as it did before the proposed amendment.**

TPA opposed allowing "local ordinances to supplant state setback requirements." TPA's comment stated, "We recognize that home-rule cities have broad powers to enact and enforce ordinances to promote the general welfare of their citizens, but those powers are not without limits. For example, the Texas Clean Air Act (TCAA) sets limits on a municipality's authority to enact ordinances for the control and abatement of air pollution or any other ordinance, where such ordinances are inconsistent with the TCAA or TCEQ rules or orders. Tex Health and Safety Code

§ 382.113(a)(2).” TxOGA commented that they do not support "pre-empting state air quality authority/primacy."

**The commission believes the commenter is misunderstanding the intent of the proposed amendment meant to clarify the distance requirement measurement. The commission has not changed the rule in response to this comment. The commission did not evaluate the merits of any local ordinance and the proposed rulemaking would does not have endorsed endorse any local ordinance. Rather, the proposed change to the rule would simply have clarified clarifies that the 50 feet required in the standard permit is not in addition to any applicable local ordinance that requires a distance equal to or greater than 50 feet. Local ordinances must stand on their own legal merit. However, in order to avoid unintended interpretations, the commission is not adopting the proposed amendment to subsection (e)(2). The subsection will read as it did before the proposed amendment.**

TxOGA commented that clarification was needed regarding "compliance with local setback ordinances." Specifically, TxOGA asked if a city grants a waiver from the set-back distance required by a local ordinance, would the waiver also apply to the permit by rule's 50-foot setback required in §106.352(e)(2)?

**The commission clarifies that 50 feet is the minimum distance required for compliance with the standard permit, regardless of waivers granted from any other applicable distance requirement, by local officials regarding their ordinance. The only exceptions to the 50 feet requirement are listed in subsections (e)(2)(A)-(C).**

TPA suggested the addition of a fourth exception to the 50 feet requirement in §106.352(e)(2). TPA recommended that the TCEQ provide that facilities that have no receptors within 250 feet of the facility's property line qualify for an exception. TPA commented that this provision would add additional compliance flexibility, particularly for those sites where a 50-foot buffer from the facility to the property line is not possible. TPA submitted this suggested language for §106.352(e)(2)(D) "any facility that has no receptor within 250 feet of the facility's property line at the time this section is claimed, registered, or certified."

**The commission has not changed the rule in response to this comment. Although the suggestion is outside the scope of this proposal, we are committed to continue working with any companies/individuals to further refine the rule, make changes to it in the future, and issue guidance.**

TPA commented that "...TCEQ revise its proposal to clearly indicate the continuing application of the exceptions in subsections (e)(2)(A) through (C) to a local ordinance."

**The commission clarifies that the exceptions in subsections (e)(2)(A) - (C) apply to the 50 feet distance requirement in the standard permit.**

**~~As discussed above, the rulemaking is only meant to clarify the distance requirements in the standard permit. Compliance with, or exceptions to, a local ordinance are outside of TCEQ's regulatory authority.~~**

*General*

Duggins, Wren, Mann and Romero, LLP commented that the applicability language of both the PBR and standard permit include that subsections (a)-(k) are applicable “only” in the Barnett Shale counties which are listed in subsection (a)(1), while guidance from TCEQ allows facilities outside of the listed counties to choose to operate under subsections (a)-(k). The commenter requested clarification.

**The commission has not changed the rule in response to this comment. The language in the rule is meant to clarify that no facilities outside of the Barnett Shale counties are required to comply with subsections (a)-(k). However, it is not meant to prohibit facilities in other counties from choosing to comply with those subsections. The commission has processed applications for sites outside of the listed counties since the effective date of the standard permit. The commission maintains that if companies so desire, facilities located outside the Barnett Shale counties may voluntarily register under the requirements in §106.352 (a)–(k), or the non-rule standard permit.**

**IX. Statutory Authority**

The amendments to this standard permit are proposed under the Texas Clean Air Act (TCAA), Texas Health and Safety Code (THSC), ' 382.011, General Powers and Duties, which authorizes the commission to control the quality of the state's air, THSC ' 382.051, Permitting Authority of Commission; Rules, which authorizes the commission to issue permits, including standard permits for similar facilities, and THSC ' 382.0513, Permit Conditions, which authorizes the commission to establish and enforce permit conditions consistent with the TCAA, THSC ' 382.05195, Standard Permit, which authorizes the commission to issue standard permits according to the procedures set out in that standard permit, and THSC §382.051963 which authorizes the commission to make certain amendments to the standard permit.

## **Air Quality Standard Permit for Oil and Gas Handling and Production Facilities**

*Effective November 8, 2012*

- (a) **Applicability.** This standard permit applies to all stationary facilities, or groups of facilities, at a site which handle gases and liquids associated with the production, conditioning, processing, and pipeline transfer of fluids or gases found in geologic formations on or beneath the earth's surface including, but not limited to, crude oil, natural gas, condensate, and produced water with the following conditions.
- (1) The requirements in paragraphs (a)-(k) of this standard permit are applicable in only for new projects and dependent facilities located in the Barnett Shale ([Archer, Bosque, Clay, Comanche,] Cooke, [Coryell,] Dallas, Denton, [Eastland,] Ellis, Erath, Hill, Hood, Jack, Johnson, Montague, Palo Pinto, Parker, [Shackelford, Stephens,] Somervell, Tarrant, and Wise Counties [counties]) on or after April 1, 2011. For all other new projects and dependent facilities in all other counties of the state, paragraph (l) of this standard permit is applicable.
  - (2) Only one Air Quality Standard Permit for Oil and Gas Handling and Production Facilities for an oil and gas site (OGS) may be registered for a combination of dependent facilities and authorizes all facilities in sweet or sour service. This standard permit may not be used if operationally dependent facilities are authorized by the permit by rule in Title 30, Texas Administrative Code (30 TAC) §106.352, Oil and Gas Handling and Production Facilities, or a permit under 30 TAC §116.111, General Application. Existing authorized facilities, or groups of facilities, at an OGS under this standard permit which are not changing certified character or quantity of emissions must only meet subsections (i) and (k) of this standard permit (protectiveness review and planned maintenance, startup, and shutdown (MSS) requirements) and otherwise retain their existing authorization. Other facilities which are not covered under this standard permit may be authorized by other authorizations at an OGS if (b)(6) and (k) of this standard permit are met.
  - (3) This standard permit does not relieve the owner or operator from complying with any other applicable provision of the Texas Health and Safety Code, Texas Water Code, rules of the Texas Commission on Environmental Quality (TCEQ), or any additional local, state or federal regulations. Emissions that exceed the limits in this standard permit are not authorized and are violations.
  - (4) Emissions from upsets, emergencies, or malfunctions are not authorized by this standard permit. This standard permit does not regulate methane, ethane, or carbon dioxide.

**(b) Definitions and Scope.**

- (1) Facility is a discrete or identifiable structure, device, item, equipment, or enclosure that constitutes or contains a stationary source. Stationary sources associated with a mine, quarry, or well test lasting less than 72 hours are not considered facilities.
- (2) Receptor includes any building which is in use as a single or multi-family residence, school, day-care, hospital, business, or place of worship at the time this standard permit is registered. A residence is a structure primarily used as a permanent dwelling. A business is a structure that is occupied for at least 8 hours a day, 5 days a week, and does not include businesses who are handling or processing materials as described in subsection (a). This term does not include structures occupied or used solely by the owner or operator of the oil and gas facility, or the mineral rights owner of the property upon which the facility is located. All measurements of distance to receptors shall be taken from the emission release point at the oil and gas facility that is nearest to the point on the building that is nearest to the oil and gas facility.
- (3) An OGS is defined as all facilities which meet the following:
  - (A) Located on contiguous or adjacent properties;
  - (B) Under common control of the same person (or persons under common control); and
  - (C) Designated under same 2-digit standard industrial classification (SIC) codes.
- (4) For purposes of determining applicability of 30 TAC Chapter 122, Federal Operating Permits, the definitions of 30 TAC §122.10, General Definitions, apply.
- (5) A project under this standard permit is defined as the following and must meet all requirements of this standard permit prior to construction or implementation of changes.
  - (A) Any new facility or new group of operationally dependent facilities at an OGS; or
  - (B) Physical changes to existing authorized facilities or group of facilities at an OGS which increase the potential to emit over previously registered emission limits; or
  - (C) Operational changes to existing authorized facilities or group of facilities at an OGS which increase the potential to emit over previously registered emission limits.
- (6) For purposes of registration under this standard permit, the following facilities shall be included:
  - (A) All facilities or groups of facilities at an OGS which are operationally dependent on each other;
  - (B) Facilities must be located within a 1/4 mile of a project emission point, vent, or fugitive component, except for those components

- excluded in (b)(6)(C) of this standard permit;
  - (C) If piping or fugitive components are the only connection between facilities and the distance between facilities exceeds 1/4 mile, then the facilities are considered separate for purposes of this registration;
  - (D) The boundaries of the registration become fixed at the time this standard permit is registered. No individual facility may be authorized under more than one registration;
  - (E) Any facility or group of facilities authorized under an existing standard permit registration which is operationally dependent on a project must be revised to incorporate the project; and
  - (F) A registration may include facilities which are claiming 30 TAC §116.620, Installation and/or Modification of Oil and Gas Facilities as well as projects which are claiming this standard permit. Existing authorized facilities, or group of facilities, at an OGS under this standard permit which are not changing registered and certified character or quantity of emissions must only meet paragraphs (i) and (k) of this standard permit (the protectiveness review and planned maintenance, startup, and shutdown (MSS) requirements) until the registration is renewed after December 31, 2015, after which paragraphs (a) – (k) of this standard permit apply.
  
- (7) For purposes of all previous claims of this standard permit (or any previous version of this standard permit) where no project is occurring:
  - (A) Existing authorized facilities, or group of facilities, which have not registered planned MSS activity emissions prior to the effective dates in (a)(1) of this standard permit must meet paragraph (i) of this standard permit (planned MSS) no later than January 5, 2012; or
  - (B) Existing authorized facilities, or group of facilities, which have registered planned MSS activity emissions and compliance with 30 TAC §116.620(a)(1) has been demonstrated prior to the effective dates in (a)(1) of this standard permit, must meet paragraph (i) of this standard permit (planned MSS) no later than the registration renewal submitted after December 31, 2015.
  
- (8) For purposes of ensuring protection of public health and welfare and demonstrating compliance with applicable ambient air standards and effects screening levels, the impacts analysis as specified in paragraph (k) of this standard permit must be completed.
  - (A) All impacts analysis must be done on a contaminant-by-contaminant basis for any net project increases. If a claim under this standard permit is only for planned MSS under paragraph (i) of this standard permit, the analysis shall evaluate planned MSS scenarios only.
  - (B) Hourly and annual emissions shall be limited based on the most stringent of paragraphs (h) or (k) of this standard permit.

(c) **Authorized Facilities, Changes and Activities.**

- (1) For existing OGS which are authorized by previous versions of this standard permit:
- (A) A project requires registration unless otherwise specified.
  - (B) The following projects do not require registration, but must comply with best management practices in paragraph (e) of this standard permit, compliance demonstrations in paragraphs (i) and (j) of this standard permit and must be incorporated into the registration at the next revision or certification:
    - (i) Addition of any piping, fugitive components, any other new facilities that increase registered emissions less than or equal to 1.0 tpy volatile organic compounds (VOC), 5.0 tpy nitrogen oxides (NO<sub>x</sub>), 0.01 tpy benzene, and 0.05 tpy hydrogen sulfide (H<sub>2</sub>S) over a rolling 12-month period;
    - (ii) Changes to any existing facilities that increase registered emissions less than or equal to 1.0 tpy VOC, 5.0 tpy nitrogen oxides (NO<sub>x</sub>), 0.01 tpy benzene, and 0.05 tpy H<sub>2</sub>S over a rolling 12-month period; or
    - (iii) ~~(ii)~~ Total increases over a rolling 60-month period that are less than or equal to 5.0 tpy VOC or NO<sub>x</sub>, 0.05 tpy benzene, or 0.1 tpy H<sub>2</sub>S; or
    - (iv) Addition of any new engine rated less than 100 horsepower (hp); or
    - (v) Replacement of any facility if the new facility does not increase the previous registered emissions.
  - (C) In lieu of registering proposed changes under this standard permit, incremental emissions increases associated with construction of new facilities or changes to existing facilities may be authorized by 30 TAC §106.261, Facilities (Emission Limitations) or §106.262, Facilities (Emissions and Distance Limitations), if the maximum worst-case emissions also meet the limitations established by paragraphs (b)(8) and (k) of this standard permit for all air contaminants with proposed increases.
- (2) All authorizations under this standard permit shall meet the following:
- (A) New, changed, or replacement facilities shall not exceed the thresholds for major source or major modification as defined in 30 TAC §116.12, Nonattainment and Prevention of Significant Deterioration Review Definitions, and in Federal Clean Air Act §112(g) or §112(j);
  - (B) All facilities shall comply with all applicable 40 Code of Federal Regulations (CFR), Parts 60, 61, and 63 requirements for New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), and Maximum Achievable Control Technology (MACT); and
  - (C) ~~(D)~~ All facilities shall comply with all applicable requirements of 30 TAC Chapters 111, Control of Air Pollution from Visible Emissions and Particulate Matter, 112, Control of Air Pollution from Sulfur Compounds, 113, Standards of Performance for Hazardous Air

Pollutants and for Designated Facilities and Pollutants, 115, Control of Air Pollution from Volatile Organic Compounds), and 117, Control of Air Pollution from Nitrogen Compounds.

- (3) To be eligible for this standard permit an applicant:
- (A) shall meet all applicable requirements as set forth in this standard permit;
  - (B) shall not misrepresent or fail to fully disclose all relevant facts in obtaining the permit; and
  - (C) shall not be indebted to the state for failure to make payment of penalties or taxes imposed by the statutes or rules within the commission's jurisdiction.

(4)[6] All facilities related to the operation of any OGS, under any version of this standard permit (or co-located at a site with an OGS standard permit), previously authorized by, and continuing to meet, the conditions of a permit by rule under 30 TAC Chapter 106, Permits by Rule (or any historical version) must:

- (A) Be incorporated into this standard permit in any initial registration, revision, or renewal for this standard permit. These facilities will become authorized by this standard permit and previous authorizations will be voided.
- (B) Meet all emission limits established by this standard permit and review in accordance with paragraph (b)(8) of this standard permit.
- (C) Meet requirements of paragraphs (e), (i), and (j) of this standard permit for Best Management Practices and Minimum Requirements, Planned MSS, and associated Records, Sampling and Monitoring of this standard permit.
- (D) Only if facilities or groups of facilities are changed in such a way as to increase the potential to emit, production processing capacity, or registered emission rate, the requirements in paragraph (e) ~~(h)~~ (BACT) of this standard permit are required to be met. In all other cases, these facilities are not required to meet paragraph (e) ~~(h)~~ of this standard permit.

(d) **Facilities and Exclusions**

- (1) Only the following specific facilities and groups of facilities have been evaluated for this standard permit, along with supporting infrastructure equipment and facilities, and may be included in a registration:
- (A) Fugitive components, including valves, pressure relief valves, pipe flanges and connectors, pumps, compressors, stuffing boxes, instrumentation and meters, natural gas driven pneumatic pumps, and other similar devices with seals that separate process and waste material from the atmosphere and the associated piping;
  - (B) Separators, including all gas, oil, and water physical separation units;
  - (C) Treatment and processing equipment, including heater-treaters, methanol injection, glycol dehydrators, molecular or mole sieves,

amine sweeteners, H<sub>2</sub>S scavenger chemical reaction vessels for sulfur removal, and iron sponge units;

- (D) Cooling towers and associated heat exchangers;
- (E) Gas recovery units, including cryogenic expansion, absorption, adsorption, heat exchangers, and refrigeration units;
- (F) Combustion units, including engines, turbines, boilers, reboilers, and heaters;
- (G) Storage tanks for crude oil, condensate, produced water fuels, treatment chemicals, slop and sump oils and pressure tanks with liquified petroleum gases;
- (H) Surface facilities associated with underground storage of gas or liquids;
- (I) Truck loading equipment;
- (J) Control equipment, including vapor recovery systems, glycol and amine reboiler condensers, flares, vapor combustors, and thermal oxidizers; and
- (K) Temporary facilities used for planned maintenance, and temporary control devices for planned start-ups and shutdowns.

(2) **Exclusions.** The following are not authorized under this standard permit:

- (A) Sour water strippers or sulfur recovery units;
- (B) Carbon dioxide hot carbonate[carbonates] processing units;
- (C) Water injection facilities (these facilities may otherwise be authorized by 30 TAC §106.351, Salt Water Disposal);
- (D) Liquefied petroleum gases, crude oil, or condensate transfer or loading into or from railcars, ships, or barges. These facilities may otherwise be authorized by 30 TAC §106.261, Facilities (Emission Limitations)) and §106.262, Facilities (Emissions and Distance Limitations);
- (E) Incinerators for solid waste destruction;
- (F) Remediation of petroleum contaminated water and soil. These facilities may otherwise be authorized by 30 TAC §106.533, Remediation; and
- (G) Cooling Towers and heat exchangers with direct contact with gaseous or liquid process streams containing VOC, H<sub>2</sub>S, halogens or halogen compounds, cyanide compounds, inorganic acids, or acid gases.

(e) **Best Management Practices (BMP) and Best Available Control Technology (BACT) Requirements.** For any project, and any associated emission control equipment registered under this standard permit this paragraph shall be met as applicable. These requirements are not applicable to existing, unchanging facilities until any renewal submitted after December 31, 2015.

- (1) All facilities which have the potential to emit air contaminants must be maintained in good working order and operated properly during facility operations. Each operator shall establish and maintain a program to replace, repair, and/or maintain facilities to keep them in good working order. The minimum requirements of this program shall include:
  - (A) Compliance with manufacturer's specifications and recommended

programs applicable to equipment performance and effect on emissions, or alternatively, an owner or operator developed maintenance plan for such equipment that is consistent with good air pollution control practices.

- (B) Cleaning and routine inspection of all equipment; and
- (C) Replacement and repair of equipment on schedules which prevent equipment failures and maintain performance.

(2) Any OGS facility shall be operated at least 50 feet from any property line or receptor (whichever is closer to the facility). ~~This distance limitation does not apply as specified in (A) – (C) of this section of this standard permit. Compliance with local set back ordinances with distance requirements greater than or equal to 50 feet between the facility and a receptor satisfies all separation requirements of this paragraph.~~ {This distance limitation does not apply to the following:}

- (A) Any fugitive components that are used for isolation and or safety purposes may be located at one-half of the width of any applicable easement;
- (B) Any facility at a location for which the distance requirements were satisfied at the time this standard permit is registered (provided that the authorization was maintained) regardless of whether a receptor is subsequently built or put to use less than 50 feet from any OGS facility; or
- (C) Existing facilities which are located less than 50 feet from a property line or receptor when constructed and previously authorized. If modified or replaced, the operator shall consider, to the extent that good engineering practice will permit, moving these facilities to meet the 50 foot requirement. Replacement facilities must meet all other requirements of this standard permit.

(3) Engines and turbines shall meet the emission and performance standards listed in Table 6 in paragraph (m) and the following requirements:

- (A) Liquid fueled engines used for back-up power generation and periodic power needs at the OGS are authorized if the fuel has no more than 0.05% sulfur and the engine is operated less than 876 hours per rolling 12-month period.
- (B) Engines and turbines used for electric generation more than 876 hours per rolling 12-month period are authorized if no reliable electric service is readily available. In all other circumstances, electric generators must meet the technical requirements of the Air Quality Standard Permit for Electric Generating Unit (EGU) (not including the EGU standard permit registration requirements) and the emissions shall be included in the registration under this standard permit;
- (C) All applicable requirements of 30 TAC Chapter 117; and
- (D) All applicable requirements of 40 CFR Part 60 and 40 CFR Part 63.
- (E) Compression ignition engines that are rated less than 225 kW (300 hp) and emit less than or equal to the emission tier for an

equivalent sized model year 2008 non-road compression ignition engine located at 40 CFR § 89.112, Table 1 are authorized.

- (4) Open-topped tanks or ponds containing VOCs or H<sub>2</sub>S are allowed up to a PTE equal to 1 tpy of VOC and 0.1 tpy of H<sub>2</sub>S.
- (5) All process equipment and storage facilities individually must meet the requirements of BACT listed in Table 10 in paragraph (m). Any combination of process equipment and storage facilities with an uncontrolled PTE of equal to or greater than 25 tpy of VOC must also meet the requirements of Table 10, row titled "Combined Control Requirements." All of the following streams and facilities must be included for this site-wide assessment:
  - (A) For any gaseous vent stream with a concentration of 1% VOC must be considered for capture and control requirements;
  - (B) For any liquid stream with a potential to emit of equal to or greater than 1 tpy VOC for each vessel or storage facility.
- (6) The following shall apply to all fugitive components associated with the project:
  - (A) All seals and gaskets in VOC or H<sub>2</sub>S service shall be installed, checked, and properly maintained to prevent leaking. All components shall be physically inspected quarterly for leaks.
  - (B) New and replaced fugitive components and instrumentation in gas or liquid service with the uncontrolled potential to emit equal to or greater than 10 tpy VOC or 1 tpy H<sub>2</sub>S are subject to a leak detection and repair (LDAR) program as specified in Table 9 in paragraph (m). Additional requirements are applicable where uncontrolled potential to emit equal to or greater than 25 tpy VOC or 5 tpy H<sub>2</sub>S as specified in Table 9. Planned MSS from fugitive components must also meet the requirements of Table 9.
  - (C) All components found to be leaking shall be repaired. Every reasonable effort shall be made to repair a leaking component. All leaks not repaired immediately shall be tagged or noted in a log. At manned sites, leaks shall be repaired no later than 30 days after the leak is found. At unmanned sites, leaks shall be repaired no later than 60 days after the leak is found. If the repair of a component would require a unit shutdown, which would create more emissions than the repair would eliminate, the repair may be delayed until the next shutdown.
  - (D) Tank hatches, not designed to be completely sealed, shall remain closed (but not completely sealed in order to maintain safe design functionality) except for sampling, gauging, loading, unloading, or planned maintenance activities.

(E) To the extent that good engineering practices will permit, new and reworked valves and piping connections shall be located in a place that is reasonably accessible for leak checking during plant operation and underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.

- (7) Tanks and vessels must utilize a paint color that minimizes the effects of solar heating (including, but not limited to, white or aluminum). To meet this requirement the solar absorptance should be 0.43 or less, as referenced in Table 7.1-6 in Compilation of Air Pollutant Emission Factors (AP-42). Paint shall be applied according to paint producers recommended application requirements if provided and in sufficient quantity as to be considered solar resistant. Paint shall be maintained in good condition and will not compromise tank integrity. Minimal amounts of rust may be present not to exceed 10% of the external surface area of the roof or walls of the tank and in no way may compromise tank integrity. Additionally, up to 10% of the external surface area of the roof or walls of the tank or vessel may be painted with other colors to allow for identification and/or aesthetics. For tanks and vessels purposefully darkened to create the process reaction and help condense liquids from being entrained in the vapor or are in an area whereby a local, state, federal law, ordinance, or private contract predating this standard permit's effective date establishes in writing tank and vessel colors other than white, these requirements do not apply.
- (8) All emission estimation methods including but not limited to computer programs such as GRI-GLYCalc, AmineCalc, E&P Tanks, and Tanks 4.0, must be used with monitoring data generated in accordance with Table 8 in subsection (m) of this section where monitoring is required. All emission estimation methods must also be used in a way that is consistent with protocols established by the commission or promulgated in federal regulations (NSPS, NESHAPS). Where control of emissions is relied upon to meet subsection (k) of this section, control monitoring is required.
- (9) Process reboilers, heaters, and furnaces that are also used for control of waste gas streams may claim 50 to 99% destruction efficiency for VOCs and H<sub>2</sub>S depending on the design and level of monitoring applied. The 90% destruction may be claimed where the waste gas is delivered to the flame zone or combustion fire box with basic monitoring as specified in paragraph (j). Any value greater than 90% and up to 99% destruction efficiency may be claimed where enhanced monitoring and/or testing are applied as specified in paragraph (j). If the waste gas is premixed with the primary fuel gas and used as the primary fuel in the device through the primary fuel burners, 99% destruction may be claimed with basic

monitoring as specified in paragraph (j). In systems where the combustion device is designed to cycle on and off to maintain the designed heating parameters, and may not fully utilize the waste gas stream, records of run time and enhanced monitoring is required to claim any run time beyond 50%.

- (10) Vapor recovery Systems (VRSs) may claim up to 100% control. The control efficiency is based on whether it is a mechanical VRU (mVRU) or a liquid VRU (lVRU). The VRUs must meet the appropriate design, monitoring and record-keeping in Table 7 and Table 8 in paragraph (m).
- (11) Flares used for control of emissions from production, planned MSS, emergency, or upset events may claim design destruction efficiency of 98% for VOCs and H<sub>2</sub>S and 99% for VOCs containing no more than three carbon atoms that contain no elements other than carbon and hydrogen. All flares must be designed and operated in accordance with the following:
  - (A) Meet specifications for minimum heating values of waste gas, maximum tip velocity, and pilot flame monitoring found in 40 CFR §60.18;
  - (B) If necessary to ensure adequate combustion, sufficient gas shall be added to make the gases combustible;
  - (C) An infrared monitor is considered equivalent to a thermocouple for flame monitoring purposes;
  - (D) An automatic ignition system may be used in lieu of a continuous pilot;
  - (E) Flares must be lit at all times when gas streams are present;
  - (F) Fuel for all flares shall be sweet gas or liquid petroleum gas except where only field gas is available and it is not sweetened at the site; and
  - (G) Flares shall be designed for and operated with no visible emissions, except for periods not to exceed at total of 5 minutes during any two consecutive hours. Acid gas flares which must comply with opacity limits and records in accordance with 30 TAC §111.111(a)(4), Requirements for Specified Sources, regarding gas flares, are exempt from this visible emission limitation.

(H)[(I)] Flares may be designed with steam or air assist to help reduce visible emissions from the flare but must meet the appropriate requirements in 40 CFR 60.18.

(I)[(J)] At no time shall minimum heating values fall below the associated minimum heating value in 60.18
- (12) Thermal oxidation and vapor combustion control devices may claim design destruction efficiency from 90 to 99.9% for VOCs and H<sub>2</sub>S depending on the design and the level of monitoring and testing applied. A device designed for the variability of the waste gas streams it controls with basic monitoring to indicate oxidation or combustion is occurring when waste gas is directed to the device may claim 90% destruction efficiency. Devices with intermediate monitoring, designed for the variability of the waste gas streams they control, with a fire box or fire tube designed to maintain a

temperature above 1,400 degrees Fahrenheit (F) for 0.5 seconds, residence time; or designed to meet the parameters of a flare with minimum heating values of waste gas, maximum tip velocity, and pilot flame monitoring as found in 40 CFR §60.18, but within a full or partial enclosure may claim a design destruction efficiency of 90 to 98%. Devices with enhanced monitoring and ports and platforms to allow stack testing may claim a 99% efficiency where the devices are designed for the variability of the waste gas streams they control, with a fire box or fire tube designed to maintain a temperature above 1,400 degrees F for 0.5 seconds, residence time. The devices that can claim 99% destruction efficiency may claim 99.9% destruction efficiency if stack testing is conducted and confirms the efficiency and the enhanced monitoring is adjusted to ensure the continued efficiency. Temperature and residence time requirements may be modified if stack testing is conducted to confirm efficiencies.

**(f) Registration, Revision, and Renewal Requirements**

- (1) For all previous claims of this standard permit (or any previous version of this standard permit) existing authorized facilities, or group of facilities, are not required to meet the requirements of this standard permit, with the exception of planned MSS, until a renewal under the standard permit is submitted after December 31, 2015.
- (2) If no other changes except for authorizing planned MSS occurs at an existing OGS under this standard permit, or any previous version of this standard permit, (b)(7) applies.
  - (A) Records demonstrating compliance with paragraph (i) must be kept;
  - (B) If the OGS must certify emissions to establish nonapplicability of prevention of significant deterioration (PSD), nonattainment new source review (NNSR), or the federal operating permit programs, this certification may be filed using Form APD-CERT. No fee is required for this certification.
  - (C) Planned MSS shall be incorporated at the next revision or update to a registration under this standard permit after January 5, 2012, and no later than any renewal submitted after December 31, 2015.
- (3) Facilities, groups of facilities or planned MSS from facilities registered under this standard permit cannot also be authorized by a permit under 30 TAC §116.111, General Application.
- (4) Prior to construction or implementation of changes for any project which meets this standard permit a notification shall be submitted through the e-Permits system. This notification shall include the following:
  - (A) Identifying information (Core Data) and a general description of the project must be submitted through e-Permits (or if not available, hard-copy) using the "APD OGS New Project Notification."

- (B) A fee of \$25 for small businesses as defined in 30 TAC §106.50, or \$50 for all others must be submitted through the commission's e-Pay system.
- (5) For any registration which meets the emission limitations of this standard permit must meet the following:
  - (A) Within 90 days after start of operation or implemented changes (whichever occurs first), the facilities must be registered with a PI-1S Standard Permit Application.
  - (B) This registration shall include a detailed summary of maximum emissions estimates based on: site-specific or defined representative gas and liquid analysis; equipment design specifications and operations; material type and throughput; and other actual parameters essential for accuracy for determining emissions and compliance with all applicable requirements of this standard permit.
  - (C) The fee for this registration shall be \$475 for small businesses, or \$850 for all others.
  - (D) Construction may begin any time after receipt of written notification to the executive director. Operations may continue after receipt of registration if there are no objections or 45 days after receipt by the executive director of the registration, whichever occurs first.
- (6) If an OGS emissions increase, either through a change in production or addition of facilities, the site may change authorization (Level 1 or Level 2 PBR in 30 TAC §106.352 or Standard Permit) in the following circumstances:
  - (A) Within 90 days from the initial notification of construction of an oil and gas facility, a registration can update the authorization mechanism by submitting an initial registration or revision to the PBR or Standard Permit.
  - (B) Within 90 days of the change of production or installation of additional equipment, by submitting an initial registration or revision to the PBR or Standard Permit.
- (7) All registrations, registration revisions, and renewals shall be submitted to the commission through a PI-1S Standard Permit Registration Form. Fee requirements do not apply when there are changes in representations with no increase in emissions within 6-months after a standard permit registration has been issued.
- (g) Any claim under this standard permit must comply with all applicable requirements of 30 TAC §116.610; §116.611, Registration to Use a Standard Permit; §116.614, Standard Permit Fees; and §116.615, General Conditions. This standard permit supersedes: the notification requirements of 30 TAC §116.615,

General Conditions; and the emission limitations of 30 TAC §116.610(a)(1), Applicability.

- (h) **Emission Limitations.** Total maximum estimated registered or certified emissions shall meet the most stringent of the following. All emissions estimates must be based on representative worst-case operations and planned MSS activities.
- (1) Total maximum estimated annual emissions of any air contaminant shall not exceed the applicable limits for a major stationary source or major modification for PSD and NNSR as specified in 30 TAC §116.12.
  - (2) Emissions must meet the limitations established in paragraph (k) of this standard permit.
  - (3) Maximum emissions are limited to less than the following after any operator limitations or controls:

<b>Air contaminant</b>	steady-state or < 30 psig periodic releases lb/hr	≥ 30 psig periodic lb/hr up to 600 hr/yr	Total tpy
Total VOC*			250
Total crude oil or condensate VOC*	145	318	
Total natural gas VOC*	750	1635	
Benzene	7	15.4	10.2
Hydrogen sulfide	10.8	9.8	47
Sulfur dioxide	93.2		250
Nitrogen oxides	121		250
Carbon monoxide	104		250
PM10 and PM2.5	28		15

\* VOC is defined in 101.1(115) and does not include methane and ethane

- (i) **Planned Maintenance, Start-ups and Shutdowns (MSS).** For any facility, group of facilities or site using this standard permit or previous versions of this standard permit, the following shall apply:
- (1) Prior to January 5, 2012, representations and registration of planned MSS is voluntary, but if represented must meet the applicable limits of this standard permit. After January 5, 2012, all emissions from planned MSS activities and facilities must be considered for compliance with applicable

limits of this standard permit unless otherwise specified in (b)(7). This standard permit may not be used at a site or for facilities authorized under 30 TAC §116.111 if planned MSS has already been authorized under that permit.

- (2) As specified, releases of air contaminants during, or as result of, planned MSS must be quantified and meet the emission limits in this standard permit, as applicable. This analysis must include:
  - (A) Alternate operational scenarios or redirection of vent streams;
  - (B) Pigging, purging, and blowdowns;
  - (C) Temporary facilities if used for degassing or purging of tanks, vessels, or other facilities;
  - (D) Degassing or purging of tanks, vessels, or other facilities; and
  - (E) Management of sludge from pits, ponds, sumps, and water conveyances.
  
- (3) Other planned MSS activities authorized by this standard permit are limited to the following. These planned MSS activities require only recordkeeping of the activity.
  - (A) Routine engine component maintenance including filter changes, oxygen sensor replacements, compression checks, overhauls, lubricant changes, spark plug changes, and emission control system maintenance.
  - (B) Boiler refractory replacements and cleanings.
  - (C) Heater and heat exchanger cleanings.
  - (D) Turbine hot standard permit swaps.
  - (E) Pressure relief valve testing, calibration of analytical equipment; Instrumentation/analyzer maintenance; replacement of analyzer filters and screens.
  
- (4) Engine/compressor start-ups associated with preventative system shutdown activities have the option to be authorized as part of typical operations if:
  - (A) Prior to operation, alternative operating scenarios to divert gas or liquid streams are registered and certified with all supporting documentation;
  - (B) Engine/compressor shutdowns shall result in no greater than 4 lbs/hr of natural gas emissions; and
  - (C) Emissions which result from subsequent compressor start-up activities are controlled to a minimum of 98% efficiency for VOC and H<sub>2</sub>S.
  
- (j) **Records, Sampling and Monitoring.** The following records shall be maintained at a site in written or electronic form and be readily available to the agency or local air pollution control program with jurisdiction upon request. All required records must be kept at the facility site. If the facility normally operates unattended, records must be maintained at an office within Texas having day-to-day operational control of the plant site. Other requirements, including but not limited to, federal recordkeeping or testing requirements, can be used to

demonstrate compliance if the other requirements are at least as stringent as the associated requirements in the table below. Any documentation that is already being kept for other purposes will suffice for demonstrating requirements. If a control or method is not relied upon to meet this standard permit, then the associated sampling, monitoring, and records are not applicable.

- (1) Sampling and demonstrations of compliance shall include the requirements listed in Table 7 in paragraph (m) of this standard permit.
- (2) Monitoring and records for demonstrations of compliance shall include the requirements listed in Table 8 in paragraph (m) of this standard permit.

**(k) Emission Limits Based on Impacts Evaluation.**

- (1) All impacts evaluations must be completed on a contaminant-by-contaminant basis for only any net emissions increases resulting from a project and must meet the following as appropriate:
  - (A) Compliance with state or federal ambient air standards shall be demonstrated for NO<sub>2</sub>, SO<sub>2</sub>, and H<sub>2</sub>S at any property-line within one mile of a project.
  - (B) Compliance with hourly effects screening levels (ESLs) for benzene and annual ESL for benzene, shall be demonstrated at the nearest receptor within 1 mile of a project.
- (2) Distance measurements shall be determined using the following:
  - (A) For each facility or group of facilities, the shortest corresponding distance from any emission point, vent, or fugitive component to the nearest receptor must be used with the appropriate compliance determination method with the published ESLs as found through the TCEQ [commissioner's] internet webpage.
  - (B) For each facility or group of facilities, the shortest corresponding distance from any emission point, vent, or fugitive component to the nearest property line must be used with the appropriate compliance determination method with any applicable state or federal ambient air quality standard.
- (3) Impacts evaluations are not required under the following cases:
  - (A) If there is no receptor within 1 mile of a registration no further ESL review is required.
  - (B) If there is no property line within 1 mile of a registration no further ambient air quality review is required.

- (C) If the project total emissions are less than any of the following rates, no additional analysis or demonstration of the specified air contaminant is required:

<b>Air contaminant</b>	<b>lb/hr</b>
Benzene	0.039
Hydrogen sulfide	0.025
Sulfur dioxide	2
Nitrogen oxides	4

- (4) Evaluation of emissions shall meet the following.
- (A) For all evaluations of NOX to NO2 a conversion factor of 0.20 for 4 stroke rich and lean burn engines and 0.50 for 2-stroke engines may be used.
- (B) The maximum predicted concentration or rate at the property boundary or receptor, whichever is appropriate, must not exceed a state or federal ambient air standard or ESL.
- (5) The impacts analysis shall be based on the following facility emissions:
- (A) The following shall be met for ESL reviews:
- (i) If a project's air contaminant maximum predicted concentrations are equal to or less than 10% of the appropriate ESL, no further review is required;
  - (ii) If a project's air contaminant maximum predicted concentrations combined with project increases for that contaminant over a rolling 60-month period after the effective date of this revised standard permit are equal to or less than 25% of the appropriate ESL, no further review is required.
  - (iii) In all other cases, all facility emissions at an OGS, regardless of authorization type, located within 1 mile of a project requiring registration under this standard permit shall be evaluated.
- (B) The following shall be met for state and federal ambient air quality standard reviews:
- (i) If a project's air contaminant maximum predicted concentrations are equal to or less than 10% the significant impact level (SIL) (also known as de minimis impact in 30 TAC 101, General Rules), no further review is required;
  - (ii) In all other cases, all facility emissions at an OGS, regardless of authorization type, located within 1 mile of a project requiring registration under this standard permit shall be evaluated.

- (6) Evaluation must comply with one of the methods listed with no changes or exceptions:
- (A) Tables.
    - (i) Emission impact Tables 2 – 5F in paragraph (m) of this standard permit may be used in accordance with the limits and descriptions in Table 1 in paragraph (m).
    - (ii) Values in Tables 2 - 5F in paragraph (m) of this standard permit may be used with linear interpolation between height and distance points. A distance of less than 50 feet or greater than 5,500 feet may not be used. Release heights may not be extrapolated beyond the limits of any table and instead the minimum or maximum height will be used. If distances and release heights are not interpolated, the next lowest height and lesser distances shall be used for determination of maximum acceptable emissions. All facilities exempted from the distance to the property line restriction in paragraph (e)(2) of this standard permit must use 50 feet as the distance to the property line for those ambient standards based on property line.
  - (B) **Screening Modeling.** A screening model may be used to demonstrate acceptable emissions from an OGS under this standard permit if all of the parameters in the screening modeling protocol provided by the commission are met.
  - (C) **Dispersion Modeling.** A refined dispersion model may be used to demonstrate acceptable emissions from an OGS under this standard permit if all of the parameters in the refined dispersion modeling protocol provided by the commission are met.
- (l) **Existing, Unchanged Facilities and Projects Before Effective Date.** The requirements in 30 TAC §116.620 are applicable to existing unchanged facilities and new or changing facilities as specified in paragraph (a)(1) of this standard permit.
- (m) The following Tables shall be used as required by this standard permit.
- Table 1 Emission Impact Tables Limits and Descriptions;
  - Table 2 Generic Modeling Results for Fugitives & Process Vents;
  - Table 3 Generic Modeling Results for Flares and Thermal Destruction Devices
  - Table 4 Generic Modeling Results for Blowdowns, Purging, and Pigging
  - Table 5A Generic Modeling Results for Engines Less Than or Equal to 250 hp
  - Table 5B Generic Modeling Results for Engines Greater Than 250 hp to Less Than or Equal to 500 hp
  - Table 5C Generic Modeling Results for Engines Greater Than 500 hp to Less Than or Equal to 1000 hp
  - Table 5D Generic Modeling Results for Engines Greater Than 1000 hp to Less Than or Equal to 1500 hp

Table 5E Generic Modeling Results for Engines Greater Than 1500 hp to  
Less Than or Equal to 2000 hp  
Table 5F Generic Modeling Results for Engines Greater Than 2000 hp  
Table 6 Engine and Turbine Emission and Operational Standards  
Table 7 Sampling and Demonstrations of Compliance;  
Table 8 Monitoring and Records Demonstrations;  
Table 9 Fugitive Component Leak Detection and Repair (LDAR) Control  
Program; and  
Table 10 Best Available Control Technology (BACT) Requirements

**Table 1 Emission Impact Tables Limits and Descriptions**

<b>Topic</b>	<b>Description</b>	<b>Details</b>
Variables	$E_{MAX\ HOURS}$	the maximum acceptable hourly (lb/hr) emissions for a specific air contaminant
	$E_{MAX\ ANNUAL}$	the maximum acceptable annual (tpy) emissions for a specific air contaminant
	P	ambient air standard for a specific air contaminant ( $\mu\text{g}/\text{m}^3$ )
	ESL	current published effects screening level for a specific air contaminant ( $\mu\text{g}/\text{m}^3$ )
	G	the most stringent of any applicable generic value from the Generic Modeling Results Tables at the emission point's release height and distance to property line ( $\mu\text{g}/\text{m}^3/\text{lb}/\text{hr}$ )
	$WR_{EPN_x}$	weighted ratio of emissions of a specific air contaminant for each EPN divided by the sum of total emissions for all EPNs that emit that contaminant or ( $E_{EPN_x}/E_{total}$ )
Single releases or co-located groups of similar releases	hourly ambient air standard	emissions are determined by: $E_{MAX\ HOURS} = P/G$
	hourly health effects review	emissions are determined by: $E_{MAX\ HOURS} = ESL/G$
	annual ambient air standard	emissions are determined by: $E_{MAX\ ANNUAL} = (8760/2000) P/(0.08 * G)$
	annual [Annual] health effects review	emissions are determined by: $E_{MAX\ ANNUAL} = (8760/2000) ESL/(0.08 * G)$
Multiple release points	Limits	If weighted ratios are not used, the total quantity of emissions shall be assumed to be released from the most conservative applicable G value at the site.
	hourly ambient air standard	emissions are determined by: $E_{MAX\ HOURS} = (WR_{EPN1}) (P / G_{EPN1}) + (WR_{EPN2}) (P / G_{EPN2}) + (WR_{EPN_x}) (P / G_{EPN_x})$
	hourly health effects review	emissions are determined by: $E_{MAX\ HOURS} = (WR_{EPN1}) (ESL / G_{EPN1}) + (WR_{EPN2}) (ESL / G_{EPN2}) + (WR_{EPN_x}) (ESL / G_{EPN_x})$
	annual ambient air standard	emissions are determined by: $E_{MAX\ ANNUAL} = (8760/2000) [(WR_{EPN1}) (P / 0.08 * G_{EPN1}) + (WR_{EPN2}) (P / 0.08 * G_{EPN2}) + \dots (WR_{EPN_x}) (P / 0.08 * G_{EPN_x})]$
	annual health effects review	emissions are determined by: $E_{MAX\ ANNUAL} = (8760/2000) [(WR_{EPN1}) (ESL / 0.08 * G_{EPN1})] + (WR_{EPN2}) (ESL / 0.08 * G_{EPN2}) + (WR_{EPN_x}) (ESL / 0.08 * G_{EPN_x})]$

**Table 2: Fugitives and Process Vents**

Distance	Fugitive 3ft height	Loading 10 ft height	Tank Vents 20 ft height	Process Vessel 10 ft Vent	Process Vessel 20 ft Vent	Process Vessel 30 ft Vent	Process Vessel 40 ft Vent	Process Vessel 50 ft Vent	Process Vessel 60 ft Vent
(ft)	G <sub>hourly</sub> (µg/m <sup>3</sup> )/ (lb/hr)	G <sub>hourly</sub> (µg/m <sup>3</sup> )/ (lb/hr)	G <sub>hourly</sub> (µg/m <sup>3</sup> )/ (lb/hr)	G <sub>hourly</sub> (µg/m <sup>3</sup> ) /(lb/hr)	G <sub>hourly</sub> (µg/m <sup>3</sup> )/ (lb/hr)	G <sub>hourly</sub> (µg/m <sup>3</sup> )/(lb/hr)			
50	4375	1232	305	469	168	90	70	65	28
100	4375	1232	305	469	168	90	70	65	28
150	3907	1232	305	469	168	90	70	65	28
200	3089	1232	305	440	168	90	70	65	28
300	1911	1193	294	412	168	90	70	65	28
400	1269	1048	291	319	168	90	70	65	28
500	901	858	274	243	157	90	70	65	28
600	674	698	271	189	138	89	70	65	28
700	525	574	271	150	120	88	70	65	28
800	423	479	261	124	105	85	70	65	28
900	349	406	244	105	93	81	70	65	28
1000	293	348	226	91	84	77	69	65	26
1100	250	302	208	90	77	72	67	63	25
1200	217	264	191	89	70	68	64	61	24
1300	189	233	176	88	65	64	61	58	24
1400	167	208	161	87	61	60	58	55	24
1500	149	186	149	84	57	57	55	53	24
1600	134	168	137	82	54	53	52	50	23
1700	121	153	127	79	51	51	49	47	23
1800	110	139	117	76	50	48	47	45	22
1900	100	128	109	73	49	46	44	43	22
2000	92	117	102	70	49	44	42	41	21
2100	85	108	95	67	48	42	41	39	21
2200	78	101	89	64	47	40	39	38	20

**Table 2: Fugitives and Process Vents *continued***

Distance	Fugitive 3ft height	Loading 10 ft height	Tank Vents 20 ft height	Process Vessel 10 ft Vent	Process Vessel 20 ft Vent	Process Vessel 30 ft Vent	Process Vessel 40 ft Vent	Process Vessel 50 ft Vent	Process Vessel 60 ft Vent
(ft)	$G_{\text{hourly}} (\mu\text{g}/\text{m}^3)/(\text{lb}/\text{hr})$								
2300	73	94	83	61	46	39	37	36	19
2400	68	88	78	59	45	37	36	35	19
2500	64	82	74	56	43	36	35	34	18
2600	60	77	70	54	42	34	33	32	18
2700	56	73	66	52	41	33	32	31	17
2800	53	69	63	50	40	32	31	30	17
2900	50	65	60	48	39	31	30	29	16
3000	48	62	57	46	37	30	29	28	16
3500	37	49	46	38	32	26	25	25	14
4000	30	40	38	32	28	24	23	22	12
4500	25	33	32	28	25	21	20	20	11
5000	22	28	27	24	22	19	18	18	10
5500	19	25	24	21	19	17	17	16	9

**Table 3: Flares and Thermal Destruction Devices****Generic Modeling Results**

Distance	20 ft height	30 ft height	40 ft height	50 ft height	60 ft height
(ft)	$G_{\text{hourly}} (\mu\text{g}/\text{m}^3)/(\text{lb}/\text{hr})$				
50	58	43	26	25	23
100	58	43	26	25	23
150	58	43	26	25	23
200	58	43	26	25	23
300	58	43	26	25	23
400	58	43	26	25	23
500	58	43	26	25	23
600	56	43	26	25	23
700	52	43	26	25	23
800	47	43	26	25	23
900	45	43	26	25	23
1000	44	43	26	25	23
1100	42	41	25	24	23
1200	40	40	24	24	22
1300	38	38	23	23	21

**Table 3: Flares and Thermal Destruction Devices *continued*****Generic Modeling Results**

Distance	20 ft height	30 ft height	40 ft height	50 ft height	60 ft height
1400	36	36	23	21	21
1500	34	34	23	21	20
1600	32	32	22	21	20
1700	31	31	22	21	20
1800	29	29	22	20	20
1900	28	28	22	20	20
2000	26	26	21	20	19
2100	25	25	21	20	19
2200	24	24	20	20	19
2300	23	23	20	19	19
2400	22	22	20	19	18
2500	22	22	19	18	18
2600	21	21	19	18	17
2700	20	20	18	17	17
2800	19	19	18	17	16
2900	19	19	17	16	16
3000	18	18	17	16	16
3500	16	16	15	14	14

**Table 3: Flares and Thermal Destruction Devices *continued*****Generic Modeling Results**

Distance	20 ft height	30 ft height	40 ft height	50 ft height	60 ft height
4000	14	14	13	12	12
4500	13	13	12	11	11
5000	11	11	11	10	10
5500	11	11	10	9	9

**Table 4: Blowdowns, Purging, and Pigging Generic Modeling Results**

Distance	< 30 psig; 3 ft height	< 30 psig; 10 ft height	< 30 psig; 20 ft height	≥ 30 psig; 6 ft height	≥ 30 psig; 10 ft height
(ft)	G <sub>hourly</sub> (μg/m <sup>3</sup> )/(lb/hr)				
50	4304	791	244	51	25
100	4304	791	244	51	25
150	4250	777	244	51	25
200	3621	763	244	51	25
300	2367	750	225	51	25
400	1607	737	225	51	25
500	1156	671	224	51	25
600	871	581	218	48	25
700	682	498	212	44	25
800	551	427	210	40	24
900	456	368	204	36	23
1000	384	320	194	33	21
1100	328	281	182	30	20
1200	284	248	170	28	18
1300	249	221	159	27	17
1400	220	198	147	27	16
1500	196	178	137	27	15
1600	176	162	127	27	14
1700	159	147	118	27	13
1800	145	135	110	27	13

**Table 4: Blowdowns, Purging, and Pigging Generic Modeling Results *continued***

Distance	< 30 psig; 3 ft height	< 30 psig; 10 ft height	< 30 psig; 20 ft height	≥ 30 psig; 6 ft height	≥ 30 psig; 10 ft height
(ft)	G <sub>hourly</sub> (μg/m <sup>3</sup> )/(lb/hr)				
1900	132	124	103	27	13
2000	121	114	96	27	13
2100	112	106	90	27	13
2200	103	98	85	27	13
2300	96	91	80	27	13
2400	90	86	75	27	13
2500	84	81	71	27	13
2600	79	76	68	27	13
2700	74	72	64	26	13
2800	70	68	61	26	13
2900	67	64	58	26	13
3000	63	61	55	25	13
3500	50	48	45	23	13
4000	40	39	37	21	13
4500	34	33	31	19	13
5000	29	28	27	17	12
5500	25	24	23	16	11

**Table 5A Engines Less Than or Equal to 250 hp**

**Generic Modeling Results**

Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	$G_{\text{hourly}}$ ( $\mu\text{g}/\text{m}^3$ )/ (lb/hr)										
50	97	85	83	81	81	71	58	44	43	36	26
100	97	85	83	81	81	71	58	44	43	36	26
150	97	85	83	81	81	71	58	44	43	36	26
200	93	85	83	81	81	71	58	44	43	36	26
300	92	85	83	81	81	71	58	44	43	36	26
400	91	85	83	81	81	71	58	44	43	36	26
500	88	85	83	81	81	71	58	44	43	36	26
600	80	79	78	78	78	70	56	44	43	36	26
700	78	77	76	76	71	68	52	44	43	36	26
800	76	75	74	74	64	63	47	44	43	36	26
900	74	73	72	72	58	58	45	44	43	36	26
1000	72	71	71	71	53	53	44	43	43	36	26
1100	69	69	69	69	49	49	42	42	41	35	25
1200	66	66	66	65	45	45	40	40	40	35	24
1300	62	62	62	62	42	42	38	38	38	33	23
1400	59	59	59	59	39	39	36	36	36	32	23
1500	56	56	56	56	37	37	34	34	34	30	23

**Table 5A Engines Less Than or Equal to 250 hp *continued***

**Generic Modeling Results**

Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	$G_{\text{hourly}}$ ( $\mu\text{g}/\text{m}^3$ )/ (lb/hr)										
1600	53	53	53	53	35	35	32	32	32	29	22
1700	50	50	50	50	33	33	31	31	31	28	22
1800	48	48	48	48	31	31	29	29	29	26	22
1900	46	46	46	46	30	30	28	28	28	25	22
2000	44	44	44	44	28	28	26	26	26	24	21
2100	42	42	42	42	27	27	25	25	25	23	21
2200	40	40	40	40	26	26	24	24	24	22	20
2300	38	38	38	38	25	25	23	23	23	21	20
2400	37	37	37	37	24	24	22	22	22	20	20
2500	36	36	36	36	23	23	22	22	22	20	19
2600	34	34	34	34	22	22	21	21	21	19	19
2700	33	33	33	33	21	21	20	20	20	18	18
2800	32	32	32	32	21	21	19	19	19	18	18
2900	31	31	31	31	20	20	19	19	19	17	17
3000	30	30	30	30	19	19	18	18	18	17	17
3500	26	26	26	26	17	17	16	16	16	15	15
4000	23	23	23	23	15	15	14	14	14	13	13

**Table 5A Engines Less Than or Equal to 250 hp *continued***

**Generic Modeling Results**

Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	$G_{\text{hourly}}$ ( $\mu\text{g}/\text{m}^3$ )/ (lb/hr)										
4500	21	21	21	21	13	13	13	13	13	12	12
5000	19	19	19	19	12	12	11	11	11	11	11
5500	17	17	17	17	11	11	11	11	11	10	10

**Table 5B: Engines Greater Than 250 and Less Than or Equal to 500 hp *continued***

**Generic Modeling Results**

Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	$C_{\text{hourly}}$ ( $\mu\text{g}/\text{m}^3$ )/(lb/hr)										
50	60	59	54	43	43	34	34	24	21	20	17
100	60	59	54	43	43	34	34	24	21	20	17
150	60	59	54	43	43	34	34	24	21	20	17
200	60	59	54	43	43	34	34	24	21	20	17
300	60	59	54	43	43	34	34	24	21	20	17
400	60	59	54	43	43	34	34	24	21	20	17
500	60	59	54	43	43	34	34	24	21	20	17
600	57	57	52	41	41	34	34	24	21	20	17
700	52	52	47	38	38	31	31	24	21	20	17
800	47	47	43	34	34	28	28	24	21	20	17
900	42	42	39	31	31	26	26	23	20	20	17
1000	39	39	35	28	28	23	23	21	20	20	17
1100	37	36	32	26	26	23	23	20	20	19	17
1200	35	35	30	25	24	23	23	20	20	18	17
1300	34	34	28	24	23	23	23	20	20	18	16
1400	32	32	26	24	23	23	23	20	20	17	16
1500	31	31	24	23	23	23	23	20	20	16	16

**Table 5B: Engines Greater Than 250 and Less Than or Equal to 500 hp *continued***

**Generic Modeling Results**

Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	$G_{\text{hourly}}$ ( $\mu\text{g}/\text{m}^3$ )/(lb/hr)										
1600	29	29	23	23	23	23	23	19	19	16	16
1700	28	28	23	23	23	23	22	19	19	16	15
1800	27	27	22	22	22	22	22	19	19	16	15
1900	25	25	22	22	22	21	21	18	18	16	15
2000	24	24	22	22	22	21	21	17	17	16	15
2100	23	23	21	21	21	20	20	17	17	16	15
2200	22	22	21	21	21	19	19	17	17	15	15
2300	21	21	20	20	20	19	19	17	16	15	14
2400	21	21	20	20	20	19	18	16	16	15	14
2500	20	20	19	19	19	18	18	16	16	14	14
2600	19	19	19	19	19	18	17	16	16	14	13
2700	18	18	18	18	18	17	17	15	15	14	13
2800	18	18	18	18	18	17	16	15	15	13	13
2900	17	17	17	17	17	16	16	15	15	13	13
3000	17	17	17	17	17	16	15	15	15	13	13
3500	15	15	15	15	15	14	14	13	13	12	11
4000	13	13	13	13	13	13	12	12	12	11	10

**Table 5B: Engines Greater Than 250 and Less Than or Equal to 500 hp *continued***

<b>Generic Modeling Results</b>											
Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	$G_{\text{hourly}}$ ( $\mu\text{g}/\text{m}^3$ )/(lb/h r)										
4500	12	12	12	12	12	11	11	10	10	10	9
5000	11	11	11	11	11	10	10	10	10	9	9
5500	10	10	10	10	10	9	9	9	9	8	8

**Table 5C: Engines Greater Than 500 and Less Than or Equal to 1,000 hp**

<b>Generic Modeling Results</b>											
Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	$G_{\text{hourly}}$ ( $\mu\text{g}/\text{m}^3$ )/(lb/h r)										
50	26	25	25	25	18	18	17	13	11	11	10
100	26	25	25	25	18	18	17	13	11	11	10
150	26	25	25	25	18	18	17	13	11	11	10
200	26	25	25	25	18	18	17	13	11	11	10
300	26	25	25	25	18	18	17	13	11	11	10
400	26	25	25	25	18	18	17	13	11	11	10
500	26	25	25	25	18	18	17	13	11	11	10
600	26	25	25	25	18	18	17	13	11	11	10
700	26	25	25	25	18	18	17	13	11	11	10
800	24	24	24	24	18	18	17	13	11	11	10
900	23	23	23	23	18	18	17	13	11	11	10
1000	21	21	21	21	17	17	17	13	11	11	10
1100	20	20	20	20	17	17	16	13	11	11	10
1200	18	18	18	18	16	16	16	12	11	11	10
1300	17	17	17	17	15	15	15	12	11	10	10
1400	17	17	17	17	14	14	14	11	11	10	10

**Table 5C: Engines Greater Than 500 and Less Than or Equal to 1,000 hp**

<b>Generic Modeling Results</b>											
Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	$G_{\text{hourly}}$ ( $\mu\text{g}/\text{m}^3$ )/( $\text{lb}/\text{h}$ r)										
50	26	25	25	25	18	18	17	13	11	11	10
100	26	25	25	25	18	18	17	13	11	11	10
150	26	25	25	25	18	18	17	13	11	11	10
200	26	25	25	25	18	18	17	13	11	11	10
300	26	25	25	25	18	18	17	13	11	11	10
400	26	25	25	25	18	18	17	13	11	11	10
500	26	25	25	25	18	18	17	13	11	11	10
600	26	25	25	25	18	18	17	13	11	11	10
700	26	25	25	25	18	18	17	13	11	11	10
800	24	24	24	24	18	18	17	13	11	11	10
900	23	23	23	23	18	18	17	13	11	11	10
1500	17	17	16	16	13	13	13	11	11	10	9
1600	17	17	16	16	13	13	13	11	11	10	9
1700	16	16	15	15	13	12	12	11	11	9	9
1800	16	16	15	15	13	12	12	11	11	9	9
1900	15	15	14	14	13	12	12	11	10	9	9
2000	15	15	14	14	13	12	12	11	10	9	9
2100	14	14	13	13	12	12	12	11	10	9	9
2200	14	14	13	13	12	12	12	10	10	9	9
2300	13	13	12	12	12	11	11	10	10	9	8
2400	13	13	12	12	12	11	11	10	9	9	8
2500	12	12	12	12	11	11	11	10	9	9	8
2600	12	12	11	11	11	11	11	10	9	9	8

**Table 5C: Engines Greater Than 500 and Less Than or Equal to 1,000 hp**

<b>Generic Modeling Results</b>											
Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	$G_{\text{hourly}}$ ( $\mu\text{g}/\text{m}^3$ )/(lb/hr)										
50	26	25	25	25	18	18	17	13	11	11	10
100	26	25	25	25	18	18	17	13	11	11	10
150	26	25	25	25	18	18	17	13	11	11	10
200	26	25	25	25	18	18	17	13	11	11	10
300	26	25	25	25	18	18	17	13	11	11	10
400	26	25	25	25	18	18	17	13	11	11	10
500	26	25	25	25	18	18	17	13	11	11	10
600	26	25	25	25	18	18	17	13	11	11	10
700	26	25	25	25	18	18	17	13	11	11	10
800	24	24	24	24	18	18	17	13	11	11	10
900	23	23	23	23	18	18	17	13	11	11	10
2700	12	12	11	11	11	10	10	10	9	8	8
2800	11	11	11	11	11	10	10	9	9	8	8
2900	11	11	10	10	10	10	10	9	9	8	8
3000	11	11	10	10	10	10	10	9	9	8	8
3500	9	9	9	9	9	9	9	8	8	7	7
4000	8	8	8	8	8	8	8	7	7	7	6
4500	7	7	7	7	7	7	7	7	6	6	6
5000	7	7	7	7	6	6	6	6	6	6	5
5500	6	6	6	6	6	6	6	6	5	5	5

**Table 5D: Engines Greater Than 1,000 and Less Than or Equal to 1,500 hp**

**Generic Modeling Results**

Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	$G_{\text{hourly}} (\mu\text{g}/\text{m}^3)/(\text{lb}/\text{hr})$										
50	17	13	12	10	10	10	10	9	8	8	7
100	17	13	12	10	10	10	10	9	8	8	7
150	17	13	12	10	10	10	10	9	8	8	7
200	17	13	12	10	10	10	10	9	8	8	7
300	17	13	12	10	10	10	10	9	8	8	7
400	17	13	11	10	10	10	10	9	8	8	7
500	17	13	11	10	10	10	10	9	8	8	7
600	17	12	11	10	10	10	10	9	8	8	7
700	17	11	11	10	10	10	10	9	8	8	7
800	17	11	11	10	10	10	10	9	8	8	7
900	17	11	11	10	10	10	10	9	8	8	7
1000	17	11	11	10	10	10	10	9	8	8	7
1100	16	11	11	10	10	10	10	9	8	8	7
1200	15	10	10	10	9	9	9	9	8	7	7
1300	15	10	10	10	9	9	9	8	8	7	7
1400	14	10	10	10	9	9	8	8	8	7	7
1500	13	10	10	10	8	8	8	8	8	7	6

**Table 5D: Engines Greater Than 1,000 and Less Than or Equal to 1,500 hp *continued***

<b>Generic Modeling Results</b>											
Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	G <sub>hourly</sub> ( $\mu\text{g}/\text{m}^3$ )/ (lb/h r)										
1600	12	10	10	10	8	8	8	8	8	7	6
1700	12	10	10	10	8	8	8	8	8	7	6
1800	11	10	10	10	8	8	8	8	8	7	6
1900	11	10	9	9	8	8	8	7	7	7	6
2000	10	9	9	9	8	8	8	7	7	7	6
2100	10	9	9	9	8	8	8	7	7	6	6
2200	10	9	9	9	8	8	8	7	7	6	6
2300	9	9	8	8	8	8	8	7	7	6	6
2400	9	9	8	8	7	7	7	7	7	6	6
2500	9	8	8	8	7	7	7	7	6	6	5
2600	8	8	8	8	7	7	7	7	6	6	5
2700	8	8	8	8	7	7	7	7	6	6	5
2800	8	8	7	7	7	7	7	6	6	6	5
2900	8	7	7	7	7	7	7	6	6	6	5
3000	7	7	7	7	7	7	6	6	6	5	5
3500	7	6	6	6	6	6	6	6	5	5	5
4000	6	6	6	6	5	5	5	5	5	4	4
4500	5	5	5	5	5	5	5	5	4	4	4
5000	5	5	5	5	5	5	4	4	4	4	4
5500	5	4	4	4	4	4	4	4	4	4	3

**Table 5E: Engines Greater Than 1,500 and Less Than or Equal to 2,000 hp**

**Generic Modeling Results**

Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	$G_{\text{hourly}}$ ( $\mu\text{g}/\text{m}^3$ )/(lb/hr)										
50	10	9	8	8	8	7	7	7	6	5	5
100	10	9	8	8	8	7	7	7	6	5	5
150	10	9	8	8	8	7	7	7	6	5	5
200	10	9	8	8	8	7	7	7	6	5	5
300	10	9	8	8	8	7	7	7	6	5	5
400	10	9	8	8	8	7	7	7	6	5	5
500	10	9	8	8	8	7	7	7	6	5	5
600	10	9	8	8	8	7	7	7	6	5	5
700	9	8	8	8	8	7	7	7	6	5	5
800	9	8	8	8	8	7	7	7	6	5	5
900	9	8	8	8	8	7	7	7	6	5	5
1000	9	8	8	8	8	7	7	7	6	5	5
1100	9	8	8	8	8	7	7	7	6	5	5
1200	8	8	7	7	7	7	7	7	6	5	5
1300	8	8	7	7	7	7	7	6	6	5	5
1400	8	8	7	7	7	7	7	6	6	5	5
1500	8	8	7	7	7	7	7	6	5	5	5

**Table 5E: Engines Greater Than 1,500 and Less Than or Equal to 2,000 hp *continued***

<b>Generic Modeling Results</b>											
Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	G <sub>hourly</sub> ( $\mu\text{g}/\text{m}^3$ )/ (lb/hr)										
1600	8	8	7	7	7	7	7	6	5	5	5
1700	8	8	7	7	7	7	7	6	5	5	5
1800	8	8	7	7	7	7	7	6	5	5	5
1900	7	7	7	7	7	7	6	6	5	5	5
2000	7	7	7	7	7	7	6	6	5	5	5
2100	7	7	6	6	6	6	6	6	5	5	5
2200	7	7	6	6	6	6	6	6	5	5	4
2300	7	7	6	6	6	6	6	6	5	5	4
2400	7	7	6	6	6	6	6	5	5	5	4
2500	6	6	6	6	6	6	6	5	5	4	4
2600	6	6	6	6	6	6	5	5	5	4	4
2700	6	6	6	6	6	5	5	5	5	4	4
2800	6	6	6	6	5	5	5	5	4	4	4
2900	6	6	5	5	5	5	5	5	4	4	4
3000	6	5	5	5	5	5	5	5	4	4	4
3500	5	5	5	5	5	4	4	4	4	4	3
4000	4	4	4	4	4	4	4	4	4	3	3
4500	4	4	4	4	4	4	4	3	3	3	3
5000	4	4	4	3	3	3	3	3	3	3	3
5500	3	3	3	3	3	3	3	3	3	3	3

**Table 5F: Engines Greater Than 2,000 hp**

<b>Generic Modeling Results</b>											
Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	G <sub>hourly</sub> ( $\mu\text{g}/\text{m}^3$ )/(lb/h r)										
50	7	6	6	6	5	5	5	5	4	4	4
100	7	6	6	6	5	5	5	5	4	4	4
150	7	6	6	6	5	5	5	5	4	4	4
200	7	6	6	6	5	5	5	5	4	4	4
300	7	6	6	6	5	5	5	5	4	4	4
400	7	6	6	6	5	5	5	5	4	4	4
500	7	6	6	6	5	5	5	5	4	4	4
600	7	6	6	6	5	5	5	5	4	4	4
700	7	6	6	6	5	5	5	5	4	4	4
800	6	6	6	6	5	5	5	5	4	4	4
900	6	6	6	6	5	5	5	5	4	4	4
1000	6	6	6	6	5	5	5	5	4	4	4
1100	6	6	6	6	5	5	5	5	4	4	4
1200	6	6	6	6	5	5	5	5	4	4	4
1300	6	6	6	6	5	5	5	5	4	4	4
1400	6	6	6	6	5	5	5	5	4	4	4
1500	6	6	6	6	5	5	5	5	4	4	4
1600	6	6	6	6	5	5	5	5	4	4	4
1700	6	6	6	6	5	5	5	5	4	4	4
1800	6	6	6	6	5	5	5	5	4	4	4
1900	6	6	6	5	5	5	5	5	4	4	4
2000	6	6	6	5	5	5	5	5	4	4	3
2100	5	5	5	5	5	5	5	5	4	4	3
2200	5	5	5	5	5	5	5	4	4	4	3
2300	5	5	5	5	5	5	4	4	4	4	3

**Table 5F: Engines Greater Than 2,000 hp****Generic Modeling Results**

Distance	8 ft height	10 ft height	12 ft height	14 ft height	16 ft height	18 ft height	20 ft height	25 ft height	30 ft height	35 ft height	40 ft height
(ft)	$G_{\text{hourly}}$ ( $\mu\text{g}/\text{m}^3$ )/(lb/hr)										
50	7	6	6	6	5	5	5	5	4	4	4
100	7	6	6	6	5	5	5	5	4	4	4
150	7	6	6	6	5	5	5	5	4	4	4
200	7	6	6	6	5	5	5	5	4	4	4
300	7	6	6	6	5	5	5	5	4	4	4
400	7	6	6	6	5	5	5	5	4	4	4
500	7	6	6	6	5	5	5	5	4	4	4
600	7	6	6	6	5	5	5	5	4	4	4
700	7	6	6	6	5	5	5	5	4	4	4
800	6	6	6	6	5	5	5	5	4	4	4
900	6	6	6	6	5	5	5	5	4	4	4
1000	6	6	6	6	5	5	5	5	4	4	4
1100	6	6	6	6	5	5	5	5	4	4	4
1200	6	6	6	6	5	5	5	5	4	4	4
1300	6	6	6	6	5	5	5	5	4	4	4
1400	6	6	6	6	5	5	5	5	4	4	4
1500	6	6	6	6	5	5	5	5	4	4	4
2400	5	5	5	5	5	5	4	4	4	4	3
2500	5	5	5	5	4	4	4	4	4	4	3
2600	5	5	5	5	4	4	4	4	4	3	3
2700	5	5	5	5	4	4	4	4	4	3	3
2800	5	5	5	4	4	4	4	4	4	3	3
2900	4	4	4	4	4	4	4	4	4	3	3
3000	4	4	4	4	4	4	4	4	3	3	3
3500	4	4	4	4	4	4	3	3	3	3	3
4000	3	3	3	3	3	3	3	3	3	3	3
4500	3	3	3	3	3	3	3	3	3	2	2
5000	3	3	3	3	3	3	3	2	2	2	2
5500	3	3	3	3	3	2	2	2	2	2	2

**Table 6 Engine and Turbine Emission and Operational Standards**

Engine Type	Engine Size	Manufacture Date	NOx (g/bhp-hr)	CO (g/bhp-hr)	VOC (g/bhp-hr)
<b>Rich Burn, Non-emergency, Spark-ignited</b>	less than 100 hp	All dates	no standard	no standard	no standard
	greater than or equal to 100 hp	Before January 1, 2011	2	3	no standard
	greater than or equal to 100 hp	After January 1, 2011	1	3	1
	After January 1, 2015, regardless of manufacture date, no rich burn engine greater than or equal to 240 hp authorized by this permit shall emit NOx in excess of 0.5 g/bhp-hr. After January 1, 2018, regardless of manufacture date, no rich burn engine greater than or equal to 100 hp authorized by this permit shall emit NOx in excess of 0.5 g/bhp-hr. If an authorization or authorizations is issued for a spark ignited rich burn engine under this standard permit after the applicable date of January 1, 2015 or January 1, 2018, NOx emissions from that engine shall not exceed 0.5 g/bhp-hr, except that the standard permit holder shall have a one year grace period from the date of the initial authorization under this standard permit to comply with the limit of 0.5 g/bhp-hr for NOx. The commission reserves the right to re-evaluate the upgrade requirement if EPA promulgates any standards for existing engines.				
<b>Lean Burn, 2SLB Non-emergency, Spark-ignited</b>	less than 500 hp	All dates	no standard	no standard	no standard
	greater than or equal to 500 hp	Before September 23, 1982	8	3	no standard
		Before June 18, 1992 and rated less than 825 hp	8	3	no standard
		After September 23, 1982, but prior to June 18, 1992 and rated 825 hp or greater	5	3	no standard
		After June 18, 1992 but prior to July 1, 2010	2.0 except under reduced speed, 80-100% of full torque conditions may be 5.0	3	no standard
		On or after July 1, 2010	1	3	1
<b>Lean Burn, 4SLB, Non-emergency, Spark-ignited, and Dual-fuel</b>	less than 500 hp	Before July 1, 2008	no standard	no standard	no standard
		On or after July 1, 2008	2	3	1
	greater than or equal to 500 hp	Before September 23, 1982	5.0 except under reduced speed, 80-100% of full torque conditions may be 8.0	3	no standard
		Before June 18, 1992 and rated less than 825 hp	5.0 except under reduced speed, 80-100% of full torque conditions may be 8.0	3	no standard
		After September 23, 1982, but prior to June 18, 1992 and rated 825 hp or greater	5	3	no standard
		After June 18, 1992 but prior to July 1, 2010	2.0 except under reduced speed, 80-100% of full torque conditions, may be 5.0	3	no standard
		On or after July 1, 2010	1	3	1
		After January 1, 2020, no spark ignited 4-stroke lean burn engine authorized by this standard permit that existed on-site on January 1, 2012, shall emit NOx in excess of 2.0 g/bhp-hr. If an oil and gas standard permit authorization or authorizations are issued for a spark ignited 4-stroke lean burn engine after January 1, 2012, NOx emissions from that engine shall not exceed 2.0 g/bhp-hr after January 1, 2015. However, if the date of the initial authorization is after January 1, 2015, the standard permit holder shall have a three year grace period from the date of the initial authorization under the oil and gas standard permit to comply with the limit of 2.0 g/bhp-hr for NOx. The commission reserves the right to re-evaluate the upgrade requirement if EPA promulgates any standards for existing engine			
<b>Turbines</b>	Turbines shall not emit greater than 25 ppmvd @ 15% O2 for NOX and 50 ppmvd @ 15% O2 for CO.				

**Table 7 Sampling and Demonstrations of Compliance**

Category	Description	Specifications and Expectations
Exclusions	Control Systems	Control device monitoring and records are required only where the device is necessary for the site to meet emission rate limits
Sampling General	When Applicable Ports & Platforms, Methods, Notifications and Timing	<p>(A) If necessary, sampling ports and platforms shall be incorporated into the design of all exhaust stacks according to the specifications set forth in "Chapter 2, Stack Sampling Facilities." Engines and other facilities which are physically incapable of having platforms are excluded from this requirement. For control devices with effectiveness requirements only, appropriate sampling ports shall also be installed upstream of the inlet to control devices or controlled recovery systems with control efficiency requirements. Alternate sampling facility designs may be submitted for written approval by the Texas Commission on Environmental Quality (TCEQ) Regional Director or his designee.</p> <p>(B) Where stack testing is required, Sampling shall be conducted within 180 days of the change that required the registration, in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and in accordance with the appropriate EPA Reference Methods. Unless otherwise specified, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. Where appropriate, sampling shall occur as three one-hour test runs and then averaged to demonstrate compliance with the limits of this authorization. Any deviations from those procedures must be approved in writing by the TCEQ Regional Director or his designee prior to sampling.</p> <p>(C) The Regional Office shall be afforded the opportunity to observe all such sampling.</p> <p>(D) The holder of this authorization is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.</p> <p>(E) The TCEQ Regional Office that has jurisdiction over the site shall be contacted as soon as any testing is scheduled, but not less than 30 days prior to sampling. The region shall have discretion to amend the 30 day prior notification. Except for engine testing and liquid/gas analysis sampling, all other sampling shall include an opportunity for the appropriate regional office to schedule a pretest meeting. The notice shall include:</p> <p>(i) Date for pretest meeting, if required; (ii) Date sampling will occur; (iii) Name of firm conducting sampling; (iv) Type of sampling equipment to be used;</p> <p>(v) Method or procedure to be used in sampling; (vi) Procedure used to determine operating rates or other relevant parameters during the sampling period; (vii) parameters to be documented during the sampling event; (viii) any proposed deviations to the prescribed sampling methods.</p> <p>If held, the purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports.</p> <p>(F) Within 60 days after the completion of the testing and sampling required herein, one original and one copy of the sampling reports shall be sent to the Regional Office.</p> <p>(G) When sampling is required, all Quality Assurance/Quality Control shall follow 30 TAC Ch 25 National Environmental Laboratory Accreditation Conference accreditation requirements.</p>
Fugitive monitoring and LDAR	Analyzers	<p>An approved gas analyzer or other approved detection monitoring device used for the volatile organic compound fugitive inspection and repair requirement is a device that conforms to the requirements listed in Title 40 CFR ' 60.485(a) and (b), or is otherwise approved by the Environmental Protection Agency as a device to monitor for VOC fugitive emission leaks. Approved gas analyzers shall conform to requirements listed in Method 21 of 40 CFR Part 60, Appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Standard permit 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.</p> <p>In lieu of using a hydrocarbon gas analyzer and EPA Method 21, the owner or operator may use the Alternative Work Practice in 40 CFR Part 60, §60.18(g) - (i). The optical gas imaging instrument must meet all requirements specified in 40 CFR §60.18(g) - (i), except the annual Test Method 21 requirement in 40 CFR §60.18(h)(7) and the reporting requirement in 40 CFR §60.18(i)(5) do not apply.</p>

**Table 7 Sampling and Demonstrations of Compliance**

Category	Description	Specifications and Expectations
Verify composition of materials	All site-specific gas or liquid analyses	<p>Reports necessary to verify composition (including hydrogen sulfide (H<sub>2</sub>S) at any point in the process. All analyses shall be site specific or a representative sample may be used to estimate emissions if all of the parameters in the gas and liquid analysis protocol provided by the commission are met.</p> <p>A site-specific or define representative analysis shall be performed within 90 days of initial start of operation or implementation of a change which requires registration. When new streams are added to the site and the character or composition of the streams change and cause an increase in authorized emissions, or upon request of the appropriate Regional office or local air pollution control program with jurisdiction, a new analysis will need to be performed. Analysis techniques may include, but are not limited to, Gas Chromatography (GC), Tutweiler, stain tube analysis, and sales oil/condensate reports. These records will document the following: (A) H<sub>2</sub>S content; (B) flow rate; (C) heat content; or (D) other characteristic including, but not limited to: (i) American Petroleum Institute gravity and Reid vapor pressure (RVP); (ii) sales oil throughput; or (iii) condensate throughput.</p> <p>Laboratory extended VOC GC analysis at a minimum to C10+ and H<sub>2</sub>S analysis for gas and liquids for the following shall be performed and used for emission compliance demonstrations: (A) Separator at the inlet; (B) Dehydration Unit / Glycol Contactor prior to dehydrator; (C) Amine Unit prior to sweetening unit; (D) Separator dumping to gunbarrel or storage tank; (E) Tanks for liquids and vapors; or (F) P</p>
Engines & Turbines	Initial Sampling of (i) Any engine greater than 500 horsepower; (ii) Any turbine	<p>Perform stack sampling and other testing as required to establish the actual quantities of air contaminants being emitted into the atmosphere (including but not limited to nitrogen oxide (NO<sub>x</sub>), carbon monoxide (CO), and oxygen (O<sub>2</sub>). Each combustion facility shall be tested at a minimum of 50% of the design maximum firing rate of the facility. Each tested firing rate shall be identified in the sampling report. Sampling shall occur within 180 days after initial start-up of each unit. Additional sampling shall occur as requested by the TCEQ Regional Director. If there are multiple engines at an oil and gas sites (OGS) of identical model, year, and control system, sampling may be performed on 50% of the units and used for compliance demonstration of all identical units at the OGS. The remaining 50% of the units not initially tested must be tested during the next biennial testing period. This sampling is not required upon initial installation at any location if the engine or turbine was previously installed and tested at any location in the United States and the test conformed with EPA Reference Methods. Regardless of engine location, records of performance testing, or relied upon sampling reports, must remain with each specific engine for a minimum of five years unless records are unavailable and the permit holder performs the initial sampling on-site. No one may claim records are unavailable for the time period in which an engine is at the site which is authorized by this standard permit. This testing is not required for emergency engines unless requested by the TCEQ Regional Director. Idle engines do not need to be re-started only for the purpose of completing required testing. If biennial testing is required for an engine that is re-started for production purposes, the biennial testing is required within 30 days after re-starting the engine.</p>
Engines	Periodic Evaluation	<p>The following is applicable to sites with federal operating permits only: (A) For any engine with a NO<sub>x</sub> standard under Table 6, conduct evaluations of each engine performance quarterly after initial compliance testing by measuring the NO<sub>x</sub> and CO content of the exhaust. Tests shall occur more than 30 days apart. Individual engines shall be subject to the quarterly performance evaluation if they were in operation for 1000 hours or more during the quarter period. If an engine is not operating, the permit holder may delay the test until such time as the engine is expected to run for more than fourteen days. Idled engines do not need to be re-started only for the purpose of completing required testing.</p>

**Table 7 Sampling and Demonstrations of Compliance (continued)**

Category	Description	Specifications and Expectations
Engines <i>(continued)</i>	Periodic Evaluation <i>(continued)</i>	<p>(B) The use of portable analyzers specifically designed for measuring the concentration of each contaminant in parts per million by volume is acceptable for these evaluations. The portable analyzer shall be operated at minimum in accordance with the manufacturer's instructions. The operator may modify the procedure if it does not negatively alter the accuracy of the analyzer. Also, colorimetric testing (stain tubes) maybe used in these periodic evaluations. The NO<sub>x</sub> and CO emissions then shall be converted into units of grams per horsepower-hour and pounds per hour.</p> <p>(C) Emissions shall be measured and recorded in the as-found operating condition, except no compliance determination shall be established during start-up, shutdown, or under breakdown conditions.</p> <p>(D) In lieu of the above mentioned periodic monitoring for engines and biennial testing, the holder of this permit may install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) to measure and record the concentrations of NO<sub>x</sub> and CO from any engine, turbine, or other external combustion facility. Diluents to be measured include O<sub>2</sub> or CO<sub>2</sub>. Except for system breakdowns, repairs, calibration checks, zero and span adjustments, and other quality assurance tests, the Continuous Emission Monitoring Systems (CEMS) shall be in continuous operation and shall record a minimum of four, and normally 60, approximately equally spaced data points for each full hour. The NO<sub>x</sub> and diluents CEMS shall be operated according to the methods and procedures as set out in 40 CFR Part 60, Appendix B, Performance Specifications 2 and 3. The CO CEMS shall be operated according to the methods and procedures as set out in 40 CFR Part 60, Appendix B, Performance Specifications 4, 4A, or 4B. CEMS shall follow the quality assurance requirements of Appendix F except that Cylinder Gas Audits may be conducted in all four calendar quarters in lieu of the annual Relative Accuracy Test Audit. A CEMS with downtime due to breakdown or repair of more than 10% of the facility operating time for any calendar shall be considered as a defective CEMS and the CEMS shall be replaced within 2 weeks.</p>
Engines & Turbines	Biennial Testing Any engine greater than 500 horsepower or any turbine	<p>Every two years starting from the completion date of the Initial Compliance Testing, any engine greater than 500 horsepower or any turbine shall be retested according to the procedures of the Initial Compliance Testing.</p> <p>Retesting shall occur within 90 days of the two year anniversary date. If a facility has been operated for less than 2000 hours during the two year period, it may skip the retesting requirement for that period. After biennial testing, any engine retested under the above requirements shall resume periodic evaluations within the next 6 calendar months (January to June or July to December). If biennial testing is required for an engine that is re-started for production purposes, the biennial testing shall be performed within 45 days after re-starting the engine.</p>
Oxidation or Combustion Control Device	Initial Sampling and Monitoring for performance for VOC, Benzene, and H <sub>2</sub> S	<p>Stack testing, when a company wants to establish efficiencies of 99% or greater, must be coordinated and approved. Sampling is required for VOC, benzene and H<sub>2</sub>S at Region's discretion. The thermal oxidizer (TO) must have proper monitoring and sampling ports installed in the vent stream and the exit to the combustion chamber, to monitor and test the unit simultaneously.</p> <p>The temperature and oxygen measurement devices shall reduce the temperature and oxygen concentration readings to an averaging period of 6 minutes or less and record it at that frequency. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±0.75% of the temperature being measured expressed in degrees Celsius or ±2.5°C.</p> <p>The oxygen or carbon monoxide analyzer shall be zeroed and spanned daily and corrective action taken when the 24-hour span drift exceeds two times the amounts specified Performance Specification No. 3 or 4A, 40 CFR Part 60, Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.</p> <p>The oxygen or carbon monoxide analyzer shall be quality-assured at least semiannually using cylinder gas audits (CGAs) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, §5.1.2, with the following exception: a relative accuracy test audit is not required once every four quarters (i.e., two successive semiannual CGAs may be conducted). An equivalent quality-assurance method approved by the TCEQ may also be used. Successive semiannual audits shall occur no closer than four months. Necessary corrective action shall be taken for all CGA exceedances of ±15 percent accuracy and any continuous emissions monitoring system downtime in excess of 5% of the incinerator operating time.</p>

**Table 7 Sampling and Demonstrations of Compliance (continued)**

<b>Category</b>	<b>Description</b>	<b>Specifications and Expectations</b>
Oxidation or Combustion Control Device <i>(continued)</i>	Initial Sampling and Monitoring for performance for VOC, Benzene, and H <sub>2</sub> S <i>(continued)</i>	<i>(continued)</i> These occurrences and corrective actions shall be reported to the appropriate TCEQ Regional Director on a quarterly basis. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director. Quality assured or valid data of oxygen or carbon monoxide analyzer must be generated when the TO is operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, inaccurate data, repair, maintenance, or calibration may be exempted provided it does not exceed 5% of the time (in minutes) that the oxidizer operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

**Table 8 Monitoring and Records Demonstrations**

Category	Description	Record Information
Site Production or Collection	natural gas, oil, condensate, and water production records	Site inlet and outlet gas volume and sulfur concentration, daily gas/liquid production and load-out from tanks
Equipment and facility summary	Current process description	Accurate and detailed plot plan with property line, off-site receptors, and all equipment on-site or drawings with sufficient detail to confirm all authorized facilities to confirm emission estimates, impact review, and registration scope
Equipment specifications	Process units, tanks, vapor recovery systems; flares; thermal oxidizers; and reboiler control devices	A copy of the registration and emission calculations including the fixed equipment sizes or capacities and manufacturer's specifications and programs to maintain performance, with the plan and records for routine inspection, cleaning, repair and replacement.
	Leaks in piping, fugitive components and process vessels	If a leak has been found and determined that there would be less emissions from the repair by delaying repair until the next shutdown, then a record of the calculation showing that the emissions would be less shall be kept.
Physical Inspection	Fugitive Component Check	A record of the component count shall be maintained. A record of the date each quarterly inspection was made and the date components found leaking were repaired or the date of the planned shutdown.
Voluntary LDAR Program	Details of fugitive component monitoring plan, and LDAR results, including QA, QC	<p>The following records are required where a company uses an LDAR program to reduce the potential fugitive emissions from the site to meet emission limitations or certify fugitive emissions.</p> <p>(A) A monitoring program plan must be maintained that contains, at a minimum, the following information:</p> <p>(i) an accounting of all the fugitive components by type and service at the site with the total uncontrolled fugitive potential to emit estimate;</p> <p>(ii) identification of the components at the site that are required to be monitored with an instrument or are exempt with the justification, note the following can be used for this purpose: (a) piping and instrumentation diagram (PID); or (b) a written or electronic database.; (iii) the monitoring schedule for each component at the site with difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), identified and justified, note if an unsafe-to-monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe-to-monitor times and a record of the plan to monitor shall be maintained; and (iv) the monitoring method that will be used (audio, visual, or olfactory (AVO) means; Method 21; the Alternative Work Practice in 40 CFR §60.18(g) - (i)); (v) for components where instrument monitoring is used, information clarifying the adequacy of the instrument response; (vi) the plan for hydraulic or pressure testing or instrument monitoring new and reworked components.</p> <p>(B) Records must be maintained of all monitoring instrument calibrations.</p> <p>(C) Records must be maintained for all monitoring and inspection data collected for each component required to be monitored with a Method 21 portable analyzer that include the type of component and the monitoring results in ppmv regardless if the screening value is above or below the leak definition..</p> <p>(D) Leaking components must be tagged and a leaking-components monitoring log must be maintained for all leaks greater than the applicable leak definition (i.e.10,000 ppmv, 2000 ppmv, or 500 ppmv) of VOC detected using Method 21, all leaks detected by AVO inspection, and all leaks found using Alternative Work Practice specified in 40 CFR §60.18(g)-(i). The log must contain, at a minimum, the following:</p> <p>(i) the method used to monitor the leaking component (audio, visual, or olfactory inspection; Method 21; or the Alternative Work Practice in 40 CFR §60.18(g) - (i)); (ii) the name of the process unit or other appropriate identifier where the component is located; (iii) the type (e.g., valve or seal) and tag identification of component; (iv) the results of the monitoring (in ppmv if a Method 21 portable analyzer was used); (v) the date the leaking component was discovered;(vi) the date that a first attempt at repair was made to a leaking component; (vii) the date that a leaking component is repaired; (viii) the date and instrument reading of the recheck procedure after a leaking component is repaired; and (ix) the leaks that cannot be repaired until turnaround and the date that the leaking component is placed on the shutdown list.</p> <p>(E) If the owner or operator is using the Alternative Work Practice specified in 40 CFR §60.18(g) - (i), the records required by 40 CFR §60.18(i)(4).</p>

**Table 8 Monitoring and Records Demonstrations (continued)**

Category	Description	Record Information
Voluntary LDAR Program <b>(continued)</b>	Details of fugitive component monitoring plan, and LDAR results, including QA, QC <b>(continued)</b>	(F) A record of the monitored value any open-ended line or valve for which is a repair or replacement is not completed within 72 hours and monitoring in lieu of covering is chosen. (G) Any open-ended line or valve caused by a repair or replacement not completed within 72 hours shall be monitored as specified in table 10 and the checks and any corrective actions taken shall be recorded. (H) Weekly audio, visual and olfactory inspections shall be noted in a log (I) A check of the reading for any pressure-sensing device to verify rupture disc integrity shall be performed weekly and noted in a log.
Minor Changes	Additions, changes or replacement	Records showing all replacements and additions, including summary of emission type and quantities, for a rolling 6-month period of time.
Equipment Replacement	Like-Kind replacement	Records on equipment specifications and operations, including summary of emissions type and quantity.
Process Units	Glycol Dehydration Units	For emission estimates, the worst-case combination of parameters resulting in the greatest emission rates must be used. If worst-case parameters are not used, then glycol dehydrator unit monitoring records include dry gas flow rate, absorber pressure and temperature, glycol type, and circulation rate recorded weekly. If worst-case parameters are not used, then in addition to weekly unit monitoring, where control of flash tank or reboiler emissions are required to meet the emission limitations of the section and emissions are certified, the following control monitoring requirements apply weekly: flash tank temperature and pressure, any reboiler stripping gas flow rate, and condenser outlet temperature. VRU, flare, or thermal oxidizer control or reboiler fire box used for control must comply with the monitoring and recordkeeping for those devices. Where all emissions from the flash tank and the reboiler or reboiler condenser vent are directed to a VRU, flare, or thermal oxidizer designed to be on-line at all times the glycol dehydrator is in operation, the control system monitoring for the glycol dehydrator is not required.
	Amine Units	Amine units may simply retain site production or inlet gas records if all sulfur compounds in the inlet are assumed to be emitted. Where only partial removal of the inlet sulfur is assumed, for emission estimates, the worst-case combination of parameters resulting in the greatest emission rates must be used. If worst-case parameters are not used, then records of the amine solution, contactor pressure, temperature and pump rate shall be maintained. Where the waste gas is vented to combustion control, the requirements of the control device utilized should be noted.
Boilers, Reboilers, Heater-Treaters, and Process Heaters	Combustion	Records of Operational Monitoring and Testing Records Records of the hours of operation of every combustion device of any size by the use of a process monitor such as a run time meter, fuel flow meter, or other process variable that indicates a unit is running unless, in the registration for the facility, the emissions from the facility were calculated using full year operation at maximum design capacity in which case no hours of operation records must be kept.
Internal Combustion Engines	Combustion	Records of Appropriate Operational Monitoring and Testing Records Records of the hours of operation of every combustion device and engine of any size by the use of a process monitor such as a run time meter, fuel flow meter, or other process variable that indicates a unit is running. The owner or operator may test and retest at the most frequent intervals identified in Table 7 in lieu of installing a process monitor and recording the hours of operation. If an engine has no testing requirements in Table 7, no records of the hours of operation must be kept. See fuel records below
Gas Fired Turbines	Combustion	Records of Appropriate Operational Monitoring and Testing Records Records of the hours of operation of every turbine greater than 500 hp by the use of a process monitor such as a run time meter, fuel flow meter, or other process variable that indicates a unit is running unless the permit holder determined emissions from the facility assuming full year operation at maximum design capacity in which case no hours of operation records must be kept.
Fuel Records	VOC and Sulfur Content	A fuel flow meter is not required if emissions are based on maximum fuel usage for 8,760 hr/yr. There are no specific requirements for allowable VOC content of fuel. If field gas contains more than 1.5 grains (24 ppmv) of H <sub>2</sub> S or 30 grains total sulfur compounds per 100 dry standard cubic feet, the operator shall maintain records, including at least quarterly measurements of fuel H <sub>2</sub> S and total sulfur content, which demonstrate that the annual SO <sub>2</sub> emissions do not exceed limitations
Tanks/Vessels	Color/Exterior	Records demonstrating design, inspection, and maintenance of paint color and vessel integrity.

**Table 8 Monitoring and Records Demonstrations (continued)**

Category	Description	Record Information
Tanks/Vessels	Emission and emission potential	Maintain a record of the material stored in each tank/vessel that vents to the atmosphere and the maximum vapor pressure used to establish the maximum potential short-term emission rate. Where pressurized liquids can flash in the tank/vessel monitor and record weekly the maximum fluid pressure that can enter the tank / vessel. Records that tank / vessel hatches and relief valves are properly sealed when tank /vessel is directed to control and after loading events (as needed).
Truck Loading	All Types	Records indicating type of material loaded, amount transferred, method of transfer, condition of tank truck before loading.
	Vacuum Trucks	Note loading with an air mover or vacuum. No additional record is needed where a vacuum truck uses only an on-board or portable pump to push material into the truck.
	Controlled Loading	Where control is required note the control that is utilized.
Control Devices	Vapor Capture and Recovery	Records of hours of use are required for all units and on-line time must be considered when emission estimates and actual emissions inventories are calculated.  mVRU Basic Design Function Record: Record demonstrating the unit captures vapor and includes a sensing device set to capture this vapor at peak intervals. Additional Design Parameter Record: Record demonstrating additional design parameters are utilized such as additional sensing equipment, a properly designed bypass system, an appropriate gas blanket, an adequate compressor selection, and the ability to vary the drive speed for units utilizing electric driven compressors mVRUs that are used at oil and gas sites to control emissions may claim up to 100% control efficiency provided records of basic and additional design functions and parameters of a VRU along with appropriate records listed in Table 8 are satisfied.  mVRUs may claim up to 99% control efficiency for units where records of basic and additional design functions are satisfied and parameters listed in Table 8 are not satisfied.  mVRUs may claim up to 95% control efficiency for units where records listed in Table 8 are not satisfied.  IVRU The record of proper design must be kept to demonstrate how the unit was designed and for what capacity. The record of liquid replacement must be kept, along with the calculations for demonstrating that the VOC to liquid ratio has been maintained. Additionally, the system must be tested to demonstrate the efficiency. This testing needs to be performed and results recorded to receive 95% control efficiency no longer than: vacuum truck emissions: after 20 loads have been pulled through the IVRU, for tanks: Produced Water – Monthly, Crude – Bi-Monthly, Condensate – Weekly. This testing needs to be performed and results recorded to receive 98% control efficiency no longer than: vacuum truck emissions: after 15 loads have been pulled through the IVRU, for tanks: Produced Water – 3 weeks, Crude – 10 days, Condensate – 5 days.  All valves must be designed and maintained to prevent leaks. All hatches and openings must be properly gasketed and sealed with the unit properly connected.  Downtime is limited to a rolling 12 month average of 5% or 432 hr/per rolling 12 months and waste vents shall be redirected to an appropriate control device if possible during down time unless otherwise registered for alternate operating hours.
Cooling Tower	Design data	Records shall be kept of maximum cooling water circulation rate and basis, maximum total dissolved solids allowed as maintained through blowdown, and towers design drift rate. These records are only required if the cooling system is used to cool process VOC streams or control from drift eliminators or minimizing solids content is needed to meet particulate matter emission limits.

**Table 8 Monitoring and Records Demonstrations (continued)**

Category	Description	Record Information
	Particulate Monitoring, Maintenance and Repair.	Inspect and record integrity of drift eliminators annually, repairing as necessary. If a maximum solids content must be maintained through blowdowns to meet particulate emission rate limits, cooling water shall be sampled for total dissolved solids (TDS) once a month at prior to any periodic blow downs and maintain records of the monitoring results and all corrective actions.
		Cooling water VOC concentrations above 0.08 parts per million by volume (ppmv) indicate faulty equipment. Equipment shall be maintained so as to minimize VOC emissions into the cooling water. Faulty equipment shall be repaired at the earliest opportunity but no later than the next scheduled shutdown of the process unit in which the leak occurs. Records must be maintained of all monitoring data and equipment repairs.
Planned Maintenance, Start-up, and Shutdown (MSS)	Alternate Operational Scenarios and Redirection of Vent Streams	Records of redirection of vent streams during primary operational unit or control downtime, including associated alternate controls, releases and compliance with emission limitations.
Planned MSS	Pigging, Purging and Blowdowns	Pigging records, including catcher design, date, emission estimate to atmosphere and to control, and when controlled, the control device. Note where a control device is necessary to meet emission limitations the device is subject to the requirements of standard permit (e) and record requirements of this table. Purging and blowdown records, including the volume and pressure and a description of the piping and equipment involved, the date, emission estimate to atmosphere and to control, and when controlled, the control device. Where purging to control to meet a lower concentration before purging to atmosphere is conducted the concentrations of VOC, BTEX or H <sub>2</sub> S as appropriate must be measured and recorded prior to purging to atmosphere. Note where a control device is necessary to meet emission limitations the device is subject to the requirements of standard permit (e) and record requirements of this table.
Planned MSS	Temporary Facilities for Bypass, and Degassing and Purging	Temporary facility records, including a description and estimate of potential fugitive emissions from temporary piping, size and design of facilities (eg. tanks or pan volume, fill method, and throughput; engine horse power, fuel and usage time, flare tip area, ignition method, and heating value assurance method; etc.) and the date and emission estimate to atmosphere and to control for their use
Planned MSS	Management of Sludge from Pits, Ponds, Sumps and Water Conveyances	Records including the source identification, removal plan, emission estimate direct to atmosphere and through control. Note where a control device is necessary to meet emission limitations the device is subject to the requirements of standard permit (e) and record requirements of this table.
Planned MSS	Degassing or Purging of Tanks, Vessels, or Other Facilities	Records including: a) the EPN and description of vessels and equipment degassed or purged; b) the material, volume and pressure (if applicable); c) the volume of purge gas used; d) a description of the piping and equipment involved; e) clarifying estimates for a coated surface or heel; f) the date; g) emission estimate to atmosphere and to control; h) when controlled, the control device; and i) where purging to a control device to reduce concentrations before purging to atmosphere, the concentrations of VOC, BTEX or H <sub>2</sub> S as appropriate must be measured and recorded prior to purging to atmosphere.
Planned MSS	Records	Records or copies of work orders, contracts, or billing by contractors for the following activities shall be kept at the site, or nearest manned site, and made available upon request: <ul style="list-style-type: none"> <li>• Routine engine component maintenance including filter changes, oxygen sensor replacements, compression checks, overhauls, lubricant changes, spark plug changes, and emission control system maintenance;</li> <li>• Boiler refractory replacements and cleanings;</li> <li>• Heater and heat exchanger cleanings;</li> <li>• Turbine hot standard permit swaps;</li> <li>• Pressure relief valve testing, calibration of analytical equipment; instrumentation/analyzer maintenance; replacement of analyzer filters and screens.</li> </ul>

**Table 8 Monitoring and Records Demonstrations (continued)**

Category	Description	Record Information
Control Devices	Flare Monitoring	<p>Basic monitoring requires the flare and pilot flame to be continuously monitored by a thermocouple or an infrared monitor. Where an automatic ignition system is employed, the system shall ensure ignition when waste gas is present. The time, date, and duration of any loss of flare, pilot flame, or auto-ignition shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.</p> <p>A temporary, portable or backup flare used less than 480 hours per year is not required to be monitored.</p> <p>Records of hours of use are required for all units and on-line time must be considered when emission estimates and actual emissions inventories are calculated.</p>
Control Devices	Thermal Oxidation and Vapor Combustion Performance Monitoring Basic	<p>Control device monitoring and records are required only where the device is necessary for the site to meet emission rate limits.</p> <p>Basic monitoring is a thermocouple or infrared monitor that indicates the device is working.</p> <p>Records of hours of use are required for all units and on-line time must be considered when emission estimates and actual emissions inventories are calculated.</p>
	Intermediate	<p>Intermediate monitoring and records include continuously monitoring and recording temperature to insure the control device is working when waste gas can be directed to the device and showing compliance with the 1400 degrees Fahrenheit if applicable.</p>
	Enhanced	<p>Enhanced monitoring requires continuous temperature and oxygen or carbon monoxide monitoring on the exhaust with six minute averages recorded to show compliance with the temperature requirement and the design oxygen range or a CO limit of 100 ppmv. Some indication of waste gas flow to the control device, like a differential pressure, flow monitoring or valve position indicator, must also be continuously recorded, if the flow to the control device can be intermittent.</p>
	Alternate Monitoring	<p>Records of stack testing and the monitored parameters during the testing shall be maintained to allow alternate monitoring parameters and limits.</p>
Control Devices	Control with process combustion or heating devices (e.g. reboilers, heaters & furnaces)	<p>Basic monitoring is any continuous monitor that indicates when the flame in the device is on or off (other than partial operational use). The following are effective basic options: a fire box temperature monitor, rising or steady process temperature monitor, CO monitor, primary fuel flow monitor, fire box pressure monitor or equivalent.</p> <p>Enhanced monitoring for 91 to 99% control, where waste gas is not introduced as the primary fuel, must include the following monitors: continuous fire box or fire box exhaust temperature, and CO and O<sub>2</sub> monitoring, with at least 6 minute averages recorded. Additionally, enhanced monitoring where the waste gas may be flowing when the control device is not firing must show continuous disposition of the waste gas streams, including continuous monitoring of flow or valve position through any potential by-pass to the control where more than 50% run time of control is claimed.</p> <p>[Basic monitoring is any continuous monitor that indicates when the flame in the device is on or off (other than partial operational use). The following are effective basic options: a fire box temperature monitor, rising or steady process temperature monitor, CO monitor, primary fuel flow monitor, fire box pressure monitor or equivalent.</p> <p>Enhanced monitoring for 91 to 99% control, where waste gas is not the primary fuel, must include the following monitors: continuous fire box or fire box exhaust temperature monitoring; and CO and O<sub>2</sub> monitoring, with at least 6 minute averages recorded. Additionally, enhanced monitoring where the waste gas may be flowing when the control device is not firing must show continuous disposition of the waste gas streams. This includes continuous monitoring of flow or valve position through any potential by-pass to the control where more than 50% run time of the control is claimed.]</p>

**Table 9 Fugitive Component LDAR BACT Table**

**FUGITIVE COMPONENT LEAK DETECTION AND REPAIR (LDAR) BEST AVAILABLE CONTROL TECHNOLOGY REQUIREMENTS TABLE**

<p><b>Exceptions</b> <i>All fugitive components must meet the minimum design, monitoring, control and other emissions techniques listed in this Table unless the component's service meets one of the following exceptions:</i></p>	<p><b>Additional Details</b> <i>Compliance with these requirements does not assure compliance with requirements of NSPS, NESHAPS or MACT, and does not constitute approval of alternate standards for these regulations.</i></p>
<p>Total uncontrolled potential to emit from all components <math>\leq 10</math> tpy</p>	
<p>Nitrogen lines</p>	<p>No expectation to estimate emissions. Note this exemption does not include lines with nitrogen that has been used as a sweep gas.</p>
<p>Steam lines (non contact)</p>	<p>No expectation to estimate emissions.</p>
<p>Flexible plastic tubing <math>\leq 0.5</math> inches in diameter, unless it is subject to monitoring by other state or federal regulations.</p>	<p>No expectation to estimate emissions, unless it is subject to monitoring by other state or federal regulations.</p>
<p>The operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure</p>	<p>No expectation to estimate emissions.</p>
<p>Mixtures in streams where the VOC has an aggregate partial pressure of less than 0.002 psia at 68°F.</p>	<p>No expectation to estimate emissions.</p>
<p>Components containing only noble gases, <u>inserts</u> [inserts] such as CO<sub>2</sub> and water or air contaminants not typically listed on a MAERT such as methane, ethane, and Freon.</p>	<p>No expectation to estimate emissions.</p>
<p>Instrument monitoring is not required for pipeline quality sweet natural gas</p>	<p>Uncontrolled Emissions should be estimated. Must meet pipeline quality specifications</p>
<p>Instrument monitoring is not required when the aggregate partial pressure or vapor pressure is less than 0.044 psia at 68 °F or at maximum process operating temperature.</p>	<p>Uncontrolled Emissions should be estimated. This applies at all times, unless a control efficiency is being claimed for instrument monitoring, in which case there must be a record supporting that the instrument could detect a leak.</p>
<p>Instrument monitoring is not required for waste water lines containing less than 1% VOC by weight and operated at <math>\leq 1</math> psig</p>	<p>Uncontrolled Emissions should be estimated.</p>
<p>Instrument monitoring is not required for cooling water line components</p>	<p>Emissions are estimated and associated with the cooling tower</p>

**Table 9 Fugitive Component LDAR BACT Table (continued)**

**FUGITIVE COMPONENT LEAK DETECTION AND REPAIR (LDAR) BEST AVAILABLE CONTROL TECHNOLOGY REQUIREMENTS TABLE (continued)**

<p>Instrument monitoring is not required for CO<sub>2</sub> lines after VOC is removed. This is referred to as Dry Gas lines in 40 CFR Part 60 Subpart KKK, and defined as a stream having a VOC weight percentage less than 4 %; a weighted average Effects Screening Level (ESL) of the combined VOC stream is &gt; 3,500 Φg/m<sup>3</sup>; and total uncontrolled emissions for all such sources is &lt; 1 ton per year at any OGS.</p>	<p>Uncontrolled Emissions should be estimated.          The weighted average ESL<sub>x</sub> for process stream, X, with multiple VOC species will be determined by:  <math>ESL_x = f_a/ESL_a + f_b/ESL_b + f_c/ESL_c + . . . + f_n/ESL_n</math>          Where:          n =total number of VOC species in process stream;          ESL<sub>n</sub> = the effects screening level in μg/m<sup>3</sup> for the contaminant being evaluated (published in the most recent edition of the TCEQ ESL list);          f<sub>n</sub>=the weight fraction of the appropriate VOC species in relation to all other VOC in process stream.</p>
<p>At OGS sites where the total uncontrolled potential to emit from all components &lt; 25 tpy, instrument monitoring is not required on components where the aggregate partial pressure or vapor pressure is less than 0.5 psia at 100 F or at maximum process operating temperature, unless the components are subject to monitoring by other state or federal regulations.</p>	<p>Uncontrolled Emissions should be estimated.</p>
<p><b>Minimum Design, Monitoring, Technique or Control for all fugitive components with uncontrolled potential to emit of ≥ 10 tpy VOC or ≥ 1 tpy H<sub>2</sub>S</b></p>	
<p><b>Requirements</b></p>	<p><b>Additional Details</b></p>
<p>Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.</p>	<p>To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation.</p>

**Table 9 Fugitive Component LDAR BACT Table (continued)**

**FUGITIVE COMPONENT LEAK DETECTION AND REPAIR (LDAR) BEST AVAILABLE CONTROL TECHNOLOGY REQUIREMENTS TABLE (continued)**

**Minimum Design, Monitoring, Technique or Control for all fugitive components with uncontrolled potential to emit of  $\geq 10$  tpy VOC or  $\geq 1$  tpy H<sub>2</sub>S**

<b>Requirements</b>	<b>Additional Details</b>
<p><i>New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Where technically feasible new and reworked components may be screened for leaks with a soap bubble test within 8 hours of being returned to service in lieu of instrument testing. Adjustments shall be made as necessary to obtain leak-free performance.</i></p>	
<p>Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line so that no leakage occurs. Except during sampling, both valves shall be closed.</p>	<p>If the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period: the line or valve must have a cap, blind flange, plug, or second valve installed; or the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once at the end of the 72 hour period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings 20 ppmv above background</p>

<b>Table 9 Fugitive Component LDAR BACT Table (continued)</b>	
<b>FUGITIVE COMPONENT LEAK DETECTION AND REPAIR (LDAR) BEST AVAILABLE CONTROL TECHNOLOGY REQUIREMENTS TABLE (continued)</b>	
<b>Minimum Design, Monitoring, Technique or Control for all fugitive components with uncontrolled potential to emit of <math>\geq 10</math> tpy VOC or <math>\geq 1</math> tpy H<sub>2</sub>S</b>	
<b>Requirements</b>	<b>Additional Details</b>
	and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.
Components shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.	
<p>Accessible valves shall be monitored by leak-checking for fugitive emissions quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored.</p> <p>If an unsafe-to-monitor valve is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe-to-monitor times. A difficult-to-monitor component for which quarterly monitoring is specified may instead be monitored annually.</p>	Sealless/leakless valves and relief valves equipped with rupture disc or venting to a control device and exempted from instrument monitoring are not counted in the fugitive emissions estimates. See Table 7 Sampling and Demonstrations of Compliance for Fugitive and LDAR Analyzer requirements. See Table 8, Monitoring and Records Demonstrations to identify Difficult-to-monitor and unsafe-to-monitor valves.
For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity.	All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.
All pump, compressor and agitator seals shall be monitored quarterly with an approved gas analyzer or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be instrument monitored. Seal systems that prevent emissions may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure or seals degassing to vent control systems kept in good working order. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be	Pumps compressor and agitator seals that prevent leaks or direct emissions from the seals to control and are exempt from instrument monitoring are not counted in the fugitive emissions estimates. Equipment equipped with alarms would still be counted. See Table 7 Sampling and Demonstrations of Compliance for Fugitive and LDAR Analyzer requirements.

monitored.	
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**Table 9 Fugitive Component LDAR BACT Table (continued)**

**FUGITIVE COMPONENT LEAK DETECTION AND REPAIR (LDAR) BEST AVAILABLE CONTROL TECHNOLOGY REQUIREMENTS TABLE (continued)**

**Minimum Design, Monitoring, Technique or Control for all fugitive components with uncontrolled potential to emit of  $\geq 10$  tpy VOC or  $\geq 1$  tpy H<sub>2</sub>S**

<b>Requirements</b>	<b>Additional Details</b>
<p>For a site where the total uncontrolled potential to emit from all components is &lt; <b>25 tpy</b>; Components found to be emitting VOC in excess of 10,000 parts per million by volume (ppmv) using EPA Method 21, found by visual inspection to be leaking (e.g. whistling, dripping or blowing process fluids or emitting hydrocarbon or H<sub>2</sub>S odors) or found leaking using the Alternative Work Practice in 40 CFR §60.18(g) - (i) shall be considered to be leaking and shall be repaired, replaced, or tagged as specified. A first attempt to repair the leak must be made within 5 days. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging.</p>	<p>Components subject to routine instrument monitoring with an approved gas analyzer under this leak definition may claim a 75% emission reduction credit when evaluating controlled fugitive emission estimates. This reduction credit does not apply when evaluating uncontrolled emission or to any component not measured with an instrument quarterly, but is allowed for all components monitored by the Alternative Work Practice. See Table 7 Sampling and Demonstrations of Compliance for Fugitive and LDAR Analyzer requirements</p>
<p>Components <b>not</b> subject to a instrument monitoring program but found to be emitting VOC in excess of 10,000 ppmv using EPA Method 21, found by audio, visual or olfactory inspection to be leaking (e.g. whistling, dripping or blowing process fluids or emitting hydrocarbon or H<sub>2</sub>S odors) shall be considered to be leaking and shall be repaired, replaced, or tagged as specified. All components are subject to monitoring when using the Alternative Work Practice in 40 CFR §60.18(g) - (i).</p>	<p>At the discretion of the TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.</p>

**Table 9 Fugitive Component LDAR BACT Table (continued)**

**FUGITIVE COMPONENT LEAK DETECTION AND REPAIR (LDAR) BEST AVAILABLE CONTROL TECHNOLOGY REQUIREMENTS TABLE (continued)**

**Minimum Design, Monitoring, Technique or Control for all fugitive components with uncontrolled potential to emit of  $\geq 25$  tpy or  $\geq 5$  tpy H<sub>2</sub>S**

For a site where the total uncontrolled potential to emit from all components is  $\geq 25$  tpy; All the requirements for  $< 25$  tpy VOC above apply, except valves found to be emitting VOC in excess of 500 ppmv using EPA Method 21, found by audio, visual or olfactory inspection to be leaking (e.g. whistling, dripping or blowing process fluids or emitting hydrocarbon or H<sub>2</sub>S odors) or found leaking using the Alternative Work Practice in 40 CFR §60.18(g) - (i) shall be considered to be leaking and shall be repaired, replaced, or tagged as specified and Pump, compressor, and agitator seals found to be emitting VOC in excess of 2,000 ppmv using EPA Method 21, found by audio, visual or olfactory inspection to be leaking (e.g. whistling, dripping or blowing process fluids or emitting hydrocarbon or H<sub>2</sub>S odors) or found leaking using the Alternative Work Practice in 40 CFR §60.18(g) - (i) shall be considered to be leaking and shall be repaired, replaced, or tagged as specified.

Components subject to routine instrument monitoring under this leak definition may claim a 97% emission reduction credit for valves and an 85% emission reduction credit for pump, compressor and agitator seals when evaluating controlled fugitive emission estimates. This reduction credit does not apply when evaluating uncontrolled emission or to any component not measured with an instrument quarterly. See Table 7 Sampling and Demonstrations of Compliance for Fugitive and LDAR Analyzer requirements.

**LDAR Monitoring Options**

Any site may reduce the controlled fugitive emission estimates by including components not required to be monitored in the quarterly instrument monitoring program or applying the lower leak definition of the more stringent program as appropriate.

Quarterly monitoring at a leak definition of 10,000 ppmv would equate to a 75% emission reduction credit when evaluating controlled fugitive emission estimates for the component. Quarterly monitoring at a leak definition of 500 ppmv would equate to a 97% emission reduction credit for valves, flanges and connectors, a 93% emission reduction credit for pumps, and a 95% emission reduction credit for compressor, agitator seals and other component groups when evaluating controlled fugitive emission estimates. This reduction credit does not apply when evaluating uncontrolled emission or to any component not measured with an instrument quarterly. See Table 7 Sampling and Demonstrations of Compliance for Fugitive and LDAR Analyzer requirements.

<b>Table 9 Fugitive Component LDAR BACT Table (continued)</b>	
<b>FUGITIVE COMPONENT LEAK DETECTION AND REPAIR (LDAR) BEST AVAILABLE CONTROL TECHNOLOGY REQUIREMENTS TABLE (continued)</b>	
<b>Minimum Design, Monitoring, Technique or Control for all fugitive components with uncontrolled potential to emit of <math>\geq 25</math> tpy or <math>\geq 5</math> tpy H<sub>2</sub>S</b>	
<b>Requirements</b>	<b>Additional Details</b>
<b>LDAR Monitoring Options</b>	
<p>After completion of the required quarterly inspections for a period of at least two years, the operator of the OGS facility may change the monitoring schedule as follows: (i) After two consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0%, an owner or operator may begin to skip one of the quarterly leak detection periods for the valves in gas/vapor and light liquid service. (ii) After five consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0%, an owner or operator may begin to skip three of the quarterly leak detection periods for the valves in gas/vapor and light liquid service. If the owner or operator is using the Alternative Work Practice in 40 CFR §60.18(g) - (i), the alternative frequencies specified in this standard permit are not allowed.</p>	
<b>Shutdown prior to Maintenance of Fugitive Components</b>	<b>Start-up after Maintenance of components</b>
<p>All components shall be kept in good repair. During repair or replacement, emission releases from the emptying of associated piping, equipment, and vessels must meet the emission limits and control requirements listed under pipeline or compressor blowdowns.</p>	<p>When returning associated equipment and piping to service after repair or replacement of fugitive components, appropriate leak detection shall occur and correction, maintenance or repair shall be immediately performed if fugitive components are not in good working order.</p>

**Table 10 Best Available Control Technology Requirements**

<b>Source or Facility</b>	<b>Air Contaminant</b>	<b>Minimum Acceptable Design, Control or Technique, Control Efficiencies, and Other Details during Production Operations</b>
Combined Control Requirements	< 25 tpy VOC	No add on control is required if the continuous and periodic vents from all units, vessels and equipment (including normal operation process blow downs) is less than 25 tons of VOC per year.
	≥ 25 tpy VOC	All continuous and periodic vents on process vessels and equipment with potential emissions containing ≥ 1% VOC at any time must be captured and directed to a control device listed in the Control Device BACT Table with a minimum design control efficiency of at least 95%, if the sum of the uncontrolled PTE of the vents at the site will equal or exceed 25 tons of VOC per year. A site total potential to emit of 1 tpy of VOC from vent gas streams may be exempted from this control requirement.
Glycol Dehydration Unit	Uncontrolled PTE < 10 tpy VOC  VOC, BTEX, H <sub>2</sub> S	No control is required. Condensers included in the equipment constructed must be maintained and operated as specified by the manufacturer or design engineering.
	Uncontrolled PTE ≥ 10 tpy and < 50 tpy VOC  VOC, BTEX, H <sub>2</sub> S	All non-combustion VOC emissions shall be routed to a vapor recovery unit (VRU), the unit reboiler, or to an appropriate control device listed in the Control Device BACT Table. This includes the emissions from the condenser vent. Liquid waste or product material captured by a condenser must be enclosed and transferred to a unit compliant with the requirements of this table and the condenser must meet the requirements listed in the Control Device BACT Table with a minimum design control efficiency of 80%. For <u>condensers</u> [condensers], greater efficiencies may be claimed where enhanced monitoring and testing are applied following Table 7.  If the unit reboiler is used to control the VOC emissions from the dehydrator (e.g. to control the condenser vent and the flash tank if one is present) the unit must be designed to efficiently combust those vented VOCs at least 50% of the time the unit is operated.

**Table 10 Best Available Control Technology Requirements**

Source or Facility	Air Contaminant	Minimum Acceptable Design, Control or Technique, Control Efficiencies, and Other Details during Production Operations
	Uncontrolled PTE ≥ 50 tpy VOC  VOC, BTEX, H <sub>2</sub> S	All non-combustion VOC emissions shall be captured and directed to an appropriate control device listed in the Control Device BACT Table with a minimum design control efficiency of at least 95%.
Atmospheric Oil/Water separators	VOC with partial pressure < 0.5 psia at maximum liquid temperature or 95 F <u>whichever</u> [which ever] is greater. VOC, BTEX, H <sub>2</sub> S	May vent to atmosphere through vent no larger than 3 inch diameter. If H <sub>2</sub> S can exceed 24 ppmv in the vapor space the separator vent shall be captured and directed to a control device listed in the Control Device BACT Table with a minimum design control efficiency of at least 95%.
	VOC with partial pressure ≥ 0.5 psia at maximum liquid surface temperature or 95 F <u>whichever</u> [which ever] is greater, VOC, BTEX, H <sub>2</sub> S	The oil layer must have a floating cover over the entire liquid surface with a conservation vent to atmosphere or the vents must be captured and directed to a control device listed in the Control Device BACT Table with a minimum design control efficiency of at least 95%.  If H <sub>2</sub> S can exceed 24 ppmv in the vapor space the separator vent shall be captured and directed to a control device listed in the Control Device BACT Table with a minimum design control efficiency of at least 95%.  If the separator operates with more than 25,000 gallons (595 barrels) of liquid contained or is used as an oil storage tank, it shall be treated as a storage tank and meet those requirements.
	Oil water separators where the material entering the separator may flash. VOC, BTEX, H <sub>2</sub> S	These separators must be treated as process separators with a gas stream and follow those requirements.

**Table 10 Best Available Control Technology Requirements (continued)**

<b>Source or Facility</b>	<b>Air Contaminant</b>	<b>Minimum Acceptable Design, Control or Technique, Control Efficiencies, and Other Details during Production Operations</b>
Fuel Combustion Units including auxiliary fuel for combustion control devices	H <sub>2</sub> S	Fuel for all combustion units at the site shall be sweet natural gas or liquid petroleum gas, fuel gas containing no more than ten grains of total sulfur per 100 dry standard cubic feet (dscf), or field gas.
Boilers, Reboilers, Heater-Treaters, and Process Heaters	NO <sub>x</sub> , CO, PM <sub>10/2.5</sub> , VOC, HCHO, SO <sub>2</sub>	<p>If any unit has a designed maximum firing rate of &lt; 40 MMBTU/hr and greater than 10 MMBtu/hr, it must be designed and operated for good combustion and meet 0.10 lb/MMBtu for NO<sub>x</sub>. For boilers and reboilers greater than or equal to 40 MMBtu/hr, emission shall not exceed 0.036 lb/MMBtu for NO<sub>x</sub>. For heaters and heater treaters greater than or equal to 40 MMBtu/hr but less than 100 <u>MMBtu/hr</u> [MBtu/hr], emissions shall not exceed 0.06 lb/MMBtu for NO<sub>x</sub>. Heaters and heater treaters greater than or equal to 100 MMBtu/hr shall not exceed 0.036 lb/MMBtu for NO<sub>x</sub>.</p> <p>For boilers, reboilers, process heaters, and heater treaters with heat inputs equal to or greater than 10 MMBtu/hr, the emission limit for CO is 0.074 lb CO/MMBtu</p>
GasFired Turbines	NO <sub>x</sub> , CO, PM <sub>10/2.5</sub> , VOC, HCHO, SO <sub>2</sub>	Units shall be designed and operate with low NO <sub>x</sub> combustors and meet 25 ppmvd @ 15% O <sub>2</sub> for NO <sub>x</sub> and 50 ppmvd @ 15% O <sub>2</sub> for CO.
All Tanks	Uncontrolled PTE of < 1.0 tpy VOC or < 0.1 tpy H <sub>2</sub> S	Open-topped tanks or ponds containing VOCs or H <sub>2</sub> S are allowed
All Tanks	Uncontrolled PTE of ≥ 1.0 tpy VOC or ≥ 0.1 tpy H <sub>2</sub> S	<p>Open-topped tanks or ponds containing VOCs or H<sub>2</sub>S are not allowed.</p> <p>Tank hatches and valves, which emit to the atmosphere, shall remain closed except for sampling or planned maintenance activities. All pressure relief devices (PRD) shall be designed and operated to ensure that proper pressure in the vessel is maintained and shall stay closed except in upset or malfunction conditions. If the PRD does not automatically reset, it must be reset within 24 hours at a manned site and within one week if located at an unmanned site.</p>

**Table 10 Best Available Control Technology Requirements (continued)**

<b>Source or Facility</b>	<b>Air Contaminant</b>	<b>Minimum Acceptable Design, Control or Technique, Control Efficiencies, and Other Details during Production Operations</b>
<p>Process Separators, Crude oil, Condensate, Treatment chemicals, Produced water, Fuel, Slop/Sump Oil and any other storage tanks or vessels that contain a VOC or a film of VOC on the surface of water.</p>	<p>VOC with partial pressure &lt; 0.5 psia at maximum liquid surface temperature or 95 F <u>whichever</u> [which ever] is greater, or with uncontrolled PTE of &lt; 5 tpy VOC from working and breathing losses, including flash emissions VOC, BTEX, H<sub>2</sub>S</p>	<p>All storage tanks with a storage capacity greater than 500 gallons must be submerged fill. Existing tanks and vessels (including temporary liquid storage tanks) which are not increasing emissions at an OGS shall also meet this requirement no later than 180 days after a registration renewal as of January 1, 2016</p>
	<p>VOC with partial pressure ≥ 0.5 psia at maximum liquid surface temperature or 95 F (<u>whichever</u> [which ever] is greater), and with uncontrolled PTE of &lt; 5 tpy from working and breathing losses, including flash emissions</p>	<p>All storage tanks with a storage capacity greater than 500 gallons must be submerged fill. Un-insulated tank exterior surfaces exposed to the sun shall be of a color that minimizes the effects of solar heating (including, but not limited to, white or aluminum). To meet this requirement the solar absorptance should be 0.43 or less, as referenced in Table 7.1-6 in AP-42. Paint shall be maintained in good condition. If a new or modified tank cannot be painted white or other reflective color, then another control device may be used to control emissions. Exceptions to the color requirement include the following: (A) Up to 10% of the external surface area of the roof or walls of the tank or vessel may be painted with other colors to allow for identifying information or <u>aesthetic</u> [aesthetic] purposes; and</p>

<b>Table 10 Best Available Control Technology Requirements (continued)</b>		
<b>Source or Facility</b>	<b>Air Contaminant</b>	<b>Minimum Acceptable Design, Control or Technique, Control Efficiencies, and Other Details during Production Operations</b>
<i>(continued)</i>	<p><i>(continued)</i>            VOC with partial pressure <math>\geq 0.5</math> psia at maximum liquid surface temperature or 95 F (<u>whichever</u> [which ever] is greater), and with uncontrolled PTE of &lt; 5 tpy from working and breathing losses, including flash emissions</p> <p>VOC, BTEX, H<sub>2</sub>S</p>	<p><i>(continued)</i></p> <p>(B) If a local, state or federal law or ordinance or private contract which predates this standard permit's effective date establishes in writing tank and vessel colors other than white. If applicable, a copy of this documentation must be provided to the commission upon registration.</p> <p>(C) Tanks and vessels purposefully darkened to create the process reaction and help condense liquids from being entrained in the vapor.</p> <p>Existing tanks and vessels (including temporary liquid storage tanks) which are not increasing emissions at an OGS using shall also meet this requirement no later than 180 days after a registration renewal as of January 1, 2016.</p>

**Table 10 Best Available Control Technology Requirements (continued)**

<b>Source or Facility</b>	<b>Air Contaminant</b>	<b>Minimum Acceptable Design, Control or Technique, Control Efficiencies, and Other Details during Production Operations</b>
<i>(continued)</i>	VOC with uncontrolled PTE of $\geq 5$ tpy	<p>Vents [Vents] shall be captured and directed to an appropriate control device as listed in standard permit (e) BMP and BACT.</p> <p>Un-insulated tank exterior surfaces exposed to the sun shall be of a color that minimizes the effects of solar heating (including, but not limited to, white or aluminum). To meet this requirement the solar absorptance should be 0.43 or less, as referenced in Table 7.1-6 in AP-42. Paint shall be maintained in good condition. Exceptions to the color requirement include the following:</p> <p>(A) Up to 10% of the external surface area of the roof or walls of the tank or vessel may be painted with other colors to allow for identifying information or <u>aesthetic</u> [aesthetic] purposes; and</p> <p>(B) If a local, state or federal law or ordinance or private contract which predates this standard permit's effective date establishes in writing tank and vessel colors other than white. If applicable, a copy of this documentation must be provided to the commission upon registration.</p> <p>(C) Tanks and vessels purposefully darkened to create the process reaction and help condense liquids from being entrained in the vapor.</p> <p>Existing tanks and vessels (including temporary liquid storage tanks) which are not increasing emissions at an OGS using shall also meet this requirement no later than 180 days after a registration renewal as of January 1, 2016.</p>
Truck Loading	<p>VOC with partial pressure <math>&lt; 0.5</math> psia at maximum liquid surface temperature or 95 F whichever is greater, or with uncontrolled PTE of <math>&lt; 5</math> tpy VOC</p> <p>VOC, BTEX, H<sub>2</sub>S</p>	Loading is recommended to be performed with submerged filling, or vapor balancing back to the tank and any subsequent recovery or control device.

**Table 10 Best Available Control Technology Requirements (continued)**

<b>Source or Facility</b>	<b>Air Contaminant</b>	<b>Minimum Acceptable Design, Control or Technique, Control Efficiencies, and Other Details during Production Operations</b>
	<p>VOC with partial pressure <math>\geq 0.5</math> psia at maximum liquid surface temperature or 95 F <u>whichever</u> [which ever] is greater</p> <p>VOC, BTEX, H<sub>2</sub>S</p>	<p>Splash loading and uncontrolled vacuum truck loading is not allowed. Loading shall be performed with a control effectiveness of at least 42% as compared to splash loading. Loading may occur by submerged filling or equivalent prevention or recovery technique as listed in Table 10.</p>
	<p>VOC with uncontrolled PTE of <math>\geq 5</math> tpy</p> <p>VOC</p> <p>VOC, BTEX, H<sub>2</sub>S</p>	<p>Loading vapors shall be captured and directed to an appropriate control device listed in the Control Device BACT Table with a minimum design control efficiency of at least 98%, routed to a vapor recovery unit (VRU) with a control effectiveness of at least 95%, or vapor balanced back to the delivering storage tank equipped with a VRU, or connected to a control device listed in the Control Device BACT Table with a minimum design control efficiency of at least 95%.</p>
	<p>Controlled Loading</p>	<p>Where loading control is required, the collection or capture system must be connected to the tank truck so all displaced vapors are directed to the control device and the control device is operational before loading is commenced. When properly connected the capture efficiency will be assumed to be 70% efficient at capturing the displaced truck vapors. The capture efficiency may be assumed to be 98.7 percent efficient when the tanker truck has certification that the tank has passed vapor-tightness testing within the last 12 months using the methods described in 40 CFR 60, Subpart XX. The capture efficiency may be assumed to be 99.2 percent efficient when the tanker truck has certification that the tank has passed vapor-tightness testing within the last 12 months using the methods described in 40 CFR 63, Subpart R. Loading shall be discontinued when liquid or gas leaks from the loading or collection system are observed.</p>

**Table 10 Best Available Control Technology Requirements (continued)**

<b>Source or Facility</b>	<b>Air Contaminant</b>	<b>Minimum Acceptable Design, Control or Technique, Control Efficiencies, and Other Details during Production Operations</b>
Cooling Tower Heat Exchange System	VOC, BTEX, PM <sub>10/2.5</sub>	<p>Heat exchange systems must be non-contact design (i.e. designed and operated to avoid direct contact with gaseous or liquid process streams containing VOC, H<sub>2</sub>S, halogens or halogen compounds, cyanide compounds, inorganic acids, or acid gases).</p> <p>Systems with heat exchangers that cool a fluid with VOC shall meet the following: The cooling water must be at a higher pressure than the process fluid in the heat exchangers or the cooling tower water must be monitored monthly for VOC emissions using TCEQ Sampling Procedures Manual, Appendix P dated January 2003 or a later edition. Equipment shall be maintained so as to minimize VOC emissions into the cooling water. Cooling water VOC concentrations greater than 0.08 ppmw indicate faulty equipment. If the repair of a heat exchanger would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next planned shutdown or 180 days if no shutdowns are scheduled. Cooling towers shall be designed and operated with properly functioning drift eliminators. New cooling towers shall be designed with drift eliminators designed to meet ≤ 0.001% drift.</p>

## List of Acronyms

°C	Degrees Celsius	EFR	External floating roof tank
°F	Degrees Fahrenheit	E <sub>max</sub>	Maximum acceptable emission rate (lb/hr)
µg/m <sup>3</sup>	Micrograms per cubic meter	EPA	Environmental Protection Agency
acfm	Actual cubic feet per minute	EPN	Emission point number
ADMT	Air Dispersion Modeling Team	ESL	Effects screening level
AMINECalc	Amine Unit Air Emissions Model Ver 1.0		
AP-42	Air Pollutant Emission Factors, 5 <sup>th</sup> ed	FR	Federal Register
APD	Air Permits Division	ft	Feet
API	American Petroleum Institute	ft/sec	Feet per second
APWL	Air Pollutant Watch List		
AREACIRC	Co-located circular area source from the EPA	gal/wk	Gallons per week
		gal/yr	Gallons per year
AERMOD	Modeling System	GLC <sub>max</sub>	Max predicted ground-level concentration
AWP	Alternative Work Practices		
		GOP	General Operating Permit
BACT	Best Available Control Technology		
bbl	Barrel	H <sub>2</sub> S	Hydrogen sulfide
bbl/day	Barrels per day	HAP	Hazardous air pollutant
BMP	Best Management Practices (includes equipment manufacturer's guidelines and specifications)	HB	House Bill
		HCl	Hydrogen chloride
BTEX	Benzene, Toluene, Ethylbenzene, Xylene	hp	Horsepower
		hr	Hour
Btu/scf	British thermal units per standard cubic feet	HRVOC	Highly reactive volatile organic compounds
		HYSIM®	Hydrologic Simulation Model computer program
CEMS	Continuous Emissions Monitoring System	HYSIS®	Process simulator computer program
cf/day	Cubic feet per day		
cfm	Cubic feet per minute	ICE	Internal combustion engine
CFR	Code of Federal Regulations	IFR	Internal floating roof tank
CO <sub>2</sub>	Carbon dioxide	IR	Infrared
COS	Carbonyl sulfide	ISCST3	Industrial Source Complex Short-term Model V02035
CPR	Considerable personnel and resources		
		LACT	Lease automatic custody transfer unit
CS <sub>2</sub>	Carbon disulfide	lb	Pound
CT	Cooling towers	lb/hr	Pounds per hour
		lb/MMBtu	Pounds per million British thermal units
DEA	Diethanolamine	lbs/day	Pounds per day
DGA	Diglycolamine	LDAR	Leak detection and repair
DIPA	Di-isopropylamine	L <sub>L</sub>	Loading losses
DOT	Department of Transportation	LPG	Liquid petroleum gas
DRE	Destruction rate efficiency	LT/D	Long ton per day
dscf	Dry standard cubic feet		
DV	Designated value	m/sec	Meters per second
		MACT	Maximum Available Control Technology
E	Maximum acceptable emission rate (lb/hr)	MDEA	Methyl-diethanolamine
EF	Emission factor	MEA	Monoethanol amine

MERA	Modeling and Effects Review Applicability	T&S	Transfer and storage
MMBtu	Million British thermal units	TAC	Texas Administrative Code
MMBtu/hr	Million British thermal units per hour	TCAA	Texas Clean Air Act
MMCFD	Million cubic feet per day	TCEQ	Texas Commission on Environmental Quality
MSS	Maintenance, start-up, and shutdown	TEA	Triethanolamine
		THSC	Texas Health and Safety Code
		tpy	Tons per year
NAAQS	National Ambient Air Quality Standards	V-B	Vasquez-Beggs correlation equation
NESHAP	National Emission Standards for Hazardous Air Pollutants	VOC	Volatile organic compounds
		VRU	Vapor recovery unit or system
NGL	Natural gas liquids	WINSIM®	Windows process simulator computer program
NNSR	Nonattainment New Source Review		
NO <sub>2</sub>	Nitrogen dioxide		
NO <sub>x</sub>	Oxides of nitrogen		
NSPS	New Source Performance Standards		
NSR	New Source Review		
O <sub>2</sub>	Oxygen (molecular form)		
OGS	Oil and gas site		
PBR	Permit by Rule		
PM <sub>10</sub>	Particulate matter less than or equal to 10 microns		
POC	Products of combustion		
ppm	Parts per million		
Ppmvd	Parts per million by volume, dry		
PROSIM®	DOS based process simulator computer program		
PSD	Prevention of Significant Deterioration		
psi	Pounds per square inch		
psia	Pounds per square inch, absolute		
psig	Pounds per square inch, gage		
RICE	Reciprocating internal combustion engine		
RVP	Reid vapor pressure		
scfh	Standard cubic feet per hour		
scfm	Standard cubic feet per minute		
scmd	Standard cubic feet per day		
SCREEN3	Air dispersion modeling computer program for windows, Version 5.0. BEE-line Software c1998-2002		
SE	Standard Exemption		
SIC	Standard Industrial Classification System		
SO <sub>2</sub>	Sulfur dioxide		
SOP	Site Operating Permit		
Standard permit	Standard Permit		
SRU	Sulfur recovery unit		