TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AGENDA ITEM REQUEST

for Proposed Rulemaking

AGENDA REQUESTED: February 27, 2013

DATE OF REQUEST: February 8, 2013

INDIVIDUAL TO CONTACT REGARDING CHANGES TO THIS REQUEST, IF NEEDED: Bruce McAnally, (512) 239-2141

CAPTION: Docket No. 2012-2017-RUL. Consideration for publication of, and hearing on, proposed new Section 106.359 of 30 TAC Chapter 106, Permits By Rule.

The proposed rulemaking would add a new permit by rule Section 106.359, to authorize emissions from planned maintenance, startup, and shutdown (MSS) at oil and gas handling and production facilities. The proposed PBR requires that the permit holder keep records, develop and implement a maintenance program, and use best management practices to minimize emissions from planned MSS activities. (Tasha Burns, Betsy Peticolas) (Rule Project No. 2012-030-106-AI)

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Copy to CCC Secretary? NO YES X

Texas Commission on Environmental Quality
Interoffice Memorandum

To: Commissioners **Date:** February 8, 2013

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

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

Docket No.: 2012-2017-RUL

Subject: Commission Approval for Proposed Rulemaking
Chapter 106, Permits by Rule
Maintenance, Startup, and Shutdown (MSS) for Oil and Gas
Rule Project No. 2012-030-106-AI

Background and reason(s) for the rulemaking:
Historically, the rules of the commission and its predecessor agencies have not specifically required authorization of MSS activities. However, in December 2005, the commission established deadlines for different facility types to submit an application to authorize planned MSS emissions or lose the ability to claim an affirmative defense for unauthorized emissions during those activities. Senate Bill (SB) 1134, 82nd Legislature, 2011, created Texas Health and Safety Code (THSC), §382.051962, which extended the deadline for certain oil and gas facilities from January 5, 2012 to January 5, 2014. This proposed rulemaking will provide applicants a streamlined authorization mechanism for planned MSS to meet the extended statutory deadline.

Scope of the rulemaking:
This proposed rulemaking will add a new permit by rule (PBR) under Chapter 106 to authorize emissions from planned MSS activities at oil and gas handling and production facilities. It is intended that this proposed PBR will be used in addition to a construction authorization at an oil and gas site.

A.) Summary of what the rulemaking will do: This proposed rulemaking will add a new PBR §106.359, to authorize emissions from planned MSS at oil and gas handling and production facilities. The proposed PBR requires that the permit holder develop and implement a maintenance program and use best management practices (BMPs) to minimize emissions. The proposed PBR includes appropriate recordkeeping requirements to verify compliance, but does not require notification, registration, or certification.

B.) Scope required by federal regulations or state statutes: The legislation and corresponding THSC, §382.051962 authorizes the commission to adopt or amend PBRs or standard permits to authorize planned MSS activities. The statute also establishes actions the commission is required to take to adopt new or revised rules for oil and gas facilities. Specifically, for any new or revised PBRs or standard permits, THSC, §382.051961 requires that the commission: conduct a regulatory analysis in accordance with the government code; conduct an evaluation of credible air quality monitoring data to determine if emission limits or emissions-related requirements are needed to ensure protection of

public health; use credible air quality monitoring data and credible air quality modeling that is not based on worst-case scenarios to determine emissions limits; and consider whether the requirements of the permit should be imposed on particular geographic regions of the state.

C.) Additional staff recommendations that are not required by federal rule or state statute: None.

Statutory authority:
The new PBR is proposed 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 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 proposed PBR is also proposed 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 PBR 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 PBRs for certain types of facilities; §382.051961, which establishes specific requirements and analyses that must be conducted before the commission may adopt a new or amend an existing PBR or standard permit for oil and gas facilities; §382.051962, which extended the deadline for owners or operators of oil and gas facilities to submit an application to authorize MSS emissions to January 5, 2014; and §382.057, concerning Exemption, which authorizes exemptions from permitting. The proposed new PBR implements THSC, §§382.002, 382.011, 382.012, 382.017, 382.051, 382.05196, 385.051961, 382.051962, and 382.057.

Effect on the:
The proposed PBR should have a minimal effect on the regulated community and the public. The use of the proposed PBR is not mandatory, although staff anticipates that owners and operators of eligible oil and gas facilities will find the proposed PBR a more attractive option than a case-by-case permit or revision of existing standard permit or PBR application. The proposed PBR does not create a group of affected persons who were not affected previously, as owners and operators of oil and gas facilities are already required to authorize emissions under existing rules.

A.) Regulated community: Owners and operators of oil and gas facilities will have a streamlined method for authorizing planned MSS. The proposed PBR requires that the permit holder keep records, develop and implement a maintenance program, and use

industry BMPs to minimize emissions. The commission does not anticipate a fiscal impact because BMPs are already used at oil and gas sites, and the proposed PBR will not require registration. Companies who choose to register will be required to pay the standard PBR fees.

B.) Public: The proposed PBR is not expected to directly affect the general public. Planned MSS activities will be authorized and BMPs will be required to ensure protection of public health and the environment.

C.) Agency programs: The proposed PBR will not have a significant effect on agency programs. Voluntary registration, certification, or recertification for sites may result in a minimal increase in workload for the Air Permits Division. The commission does not anticipate a significant fiscal impact because the PBR does not require registration.

Stakeholder meetings:
The commission conducted four stakeholder meetings prior to drafting the proposed PBR. Over 150 people participated in the stakeholder process, including representatives from industry, environmental groups, and the general public. The agency held open discussions so that stakeholders could both ask questions and inform the commission about MSS activities. Information learned during the stakeholder process was used in rule development. No additional stakeholder meetings are planned, however a public hearing will be held during the public comment period.

Potential controversial concerns and legislative interest:
There will likely be legislative interest in this rule package because development of the rule is affected by the requirements of THSC, §382.051961, Permit for Certain Oil and Gas Facilities (SB 1134, 82nd Legislative Session). Adherence to each of the statutory requirements will likely be scrutinized by industry, environmental, and legislative interests. Specifically, THSC §382.051961 requires the following for adoption of a new, or revision of an existing, PBR or standard permit:

1. A regulatory analysis conducted in accordance with the government code.
2. Evaluation of credible air monitoring data.
3. Use of credible air modeling not based on a worst case scenario and that reflects air monitoring data.
4. Consideration of limiting application to a certain geographic region of the state.

Will this rulemaking affect any current policies or require development of new policies? No.

What are the consequences if this rulemaking does not go forward? Are there alternatives to rulemaking? Without this rulemaking, oil and gas operators will be without a streamlined authorization mechanism for planned MSS activities by the statutory application deadline of January 5, 2014. Alternatives to this rulemaking include:

1. Do not establish a new PBR, but allow sites to authorize planned MSS emissions under their current authorization mechanism via permit amendment, revision to standard permit representations, or claiming the emissions under an existing PBR which may not cover all planned MSS activities. For oil and gas facilities authorized under a standard permit or case-by-case new source review permit, this approach will result in substantial and potentially unnecessary permit actions and reviews, creating a significant workload increase for the Air Permits Division. Taking this approach will also make enforcement more difficult because there will be no consistent approach to MSS requirements for different oil and gas facilities.

2. Propose changes to PBR §106.263, Routine Maintenance, Start-up and Shutdown of Facilities, and Temporary Maintenance Facilities to authorize planned MSS from oil and gas sites. This approach would differ from the proposal by relying on established emission limits in §106.263 rather than BMPs, thus reducing the flexibility that the proposed PBR will provide through a site-specific maintenance program.

3. Propose changes to 30 TAC §106.352(i) and the Air Quality Standard Permit for Oil and Gas Handling and Production Facilities to expand the requirements for planned MSS activities for sites within the Barnett Shale counties to the rest of the state. This action would require compliance with the stipulations in SB 1134 and HB 1, Rider 33 (82nd Legislature). The legislation prohibits the expenditure of funds to expand the requirements of the PBR §106.352(a) – (k) and standard permit until the agency conducts a study and files a report with the Legislature on the economic impact of extending the provisions to other areas of the state. HB 1, Rider 33 also places strict limitations on the sources of funding that can be used for such a study. No expansion of the Barnett Shale requirements is anticipated and this study has not been conducted.

4. Propose changes to 30 TAC §106.352(l) to include planned MSS activities and facilities. However, this would limit the potential users. For example, sites authorized under 30 TAC §106.353, Temporary Oil and Gas Facilities and 30 TAC §106.492, Flares would not be eligible to claim planned MSS under 30 TAC §106.352(l).

Key points in the proposal rulemaking schedule:

Anticipated proposal date: February 27, 2013
Anticipated *Texas Register* publication date: March 15, 2013
Public hearing date (if any): April 4, 2013
Public comment period: March 15 – April 15, 2013
Anticipated adoption date: July 24, 2013

Re: Docket No. 2012-2017-RUL

Agency contacts:
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Attachments: None

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The Texas Commission on Environmental Quality (TCEQ, agency, or commission) proposes new §106.359.

Background and Summary of the Factual Basis for the Proposed Rule

This proposed rulemaking will add a new permit by rule (PBR) to authorize emissions from planned maintenance, startup, and shutdown (MSS) activities and facilities at oil and gas handling and production facilities. It is intended that this proposed PBR will be used in addition to a construction authorization at an oil and gas site (OGS). In the context of this proposed PBR, construction authorization means the PBR, standard permit, or New Source Review (case-by-case) permit that authorizes the production emissions at an OGS.

Historically, the rules of the commission and its predecessor agencies have not specifically required authorization of MSS activities. However, in December 2005, the commission established deadlines for different facility (as defined in Texas Health and Safety Code (THSC), §382.003(6)) types to submit an application to authorize planned MSS emissions or lose the ability to claim an affirmative defense for unauthorized emissions during those activities. The deadlines were adopted into 30 TAC §101.222(h). For oil and gas facilities under Standard Industrial Codes (SIC) 1311 (Crude Petroleum and Natural Gas), 1321 (Natural Gas Liquids), 4612 (Crude Petroleum Pipelines), 4613 (Refined Petroleum Pipelines), 4922 (Natural Gas Transmission), and 4923 (Natural Gas Transmission and Distribution), the deadline was January 5, 2012. This date was

subsequently changed to January 5, 2014, by the 82nd Legislature, 2011, when Senate Bill (SB) 1134 was adopted into law, now codified in THSC, §§382.051961 - 382.051964. The THSC is also known as the Texas Clean Air Act. This proposed PBR will provide applicants a streamlined authorization mechanism for planned MSS to meet the statutory deadline.

Specifically, THSC, §382.051962(c), states, "an unauthorized emission or opacity event from a planned maintenance, start-up, or shutdown activity is subject to an affirmative defense as established by commission rules as those rules exist on the effective date of this section {June 17, 2011} if: (1) the emission or opacity event occurs at a facility described by Section 382.051961(a); (2) an application or registration to authorize the planned maintenance, start-up, or shutdown activities of the facility is submitted to the commission on or before the earlier of: (A) January 5, 2014; or (B) the 120th day after the effective date of a new or amended permit adopted by the commission under Subsection (b); and (3) the affirmative defense criteria in the rules are met. (d) The affirmative defense described by §382.051962(c) is not available for a facility on or after the date that an application or registration to authorize the planned maintenance, start-up, or shutdown activities of the facility is approved, denied, or voided."

Furthermore, THSC, §382.051962 states planned MSS activity "means an activity with emissions or opacity that: (1) is not expressly authorized by commission permit, rule, or order and involves the maintenance, start-up, or shutdown of a facility; (2) is part of

normal or routine facility operations; (3) is predictable as to timing; and (4) involves the type of emissions normally authorized by permit."

In addition to establishing a new deadline for the submission of applications to authorize planned MSS emissions for oil and gas facilities, THSC, §382.051962 authorizes the commission to adopt PBRs or standard permits and to amend existing PBRs or standard permits to authorize planned MSS activities for OGS. The statute also establishes actions the commission is required to take to adopt new or revise rules for oil and gas facilities. Specifically, for any new PBRs or standard permits or revisions to PBRs or standard permits, THSC, §382.051961 requires that the commission: conduct a regulatory analysis in accordance with the Texas Government Code; conduct an evaluation of credible air quality monitoring data to determine if emission limits or emissions-related requirements are needed to ensure protection of public health; use credible air quality monitoring data and credible air quality modeling that is not based on worst-case scenarios to determine emissions limits; and consider whether the requirements of the permit should be imposed on particular geographic regions of the state.

According to Texas Railroad Commission records as of January 2012, there are almost 400,000 active oil and gas wells in the state. Construction of many OGSs may be authorized by claiming a PBR (§106.352, Oil and Gas Handling and Production Facilities) or standard permit (30 TAC §116.620, Installation and/or Modification of Oil

and Gas Facilities). Some companies have chosen to include planned MSS emissions in their construction authorization. However, of the more than 10,000 oil and gas projects reviewed by the commission in the last four years, only a small percentage has voluntarily included planned MSS activities. PBR §106.263, Routine Maintenance, Start-up and Shutdown of Facilities, and Temporary Maintenance Facilities, may authorize planned MSS emissions for some oil and gas related activities. However, it is limited in scope and specifically precludes its use for facilities authorized under the most common oil and gas construction authorizations, such as PBRs, §106.352 and §106.512, Stationary Engines and Turbines. There is currently no specific PBR available for OGSs that covers all known planned MSS activities. Instead of requiring previously registered sites to revise existing authorizations, the commission is proposing this new PBR to provide an effective authorization mechanism of all planned MSS at an OGS.

What information did the commission use to develop the proposed PBR?

The commission conducted significant research to develop the proposed rule. Staff analyzed oil and gas registrations submitted to the agency and conducted further review of the projects that included representations regarding planned MSS activities. The commission formed a rule team with representatives from the following commission programs: air permitting, air quality, compliance and enforcement (investigators), legal, monitoring, small business assistance, and toxicology. The commission consulted with oil and gas permitting consultants, equipment vendors, and maintenance contractors. Staff reviewed relevant academic texts and gained significant details through the

stakeholder process. The commission used existing monitoring data, including results from a specific monitoring project and air canister sampling data. The commission also conducted a case study regarding emissions events and reviewed state-wide benzene emission monitoring data evaluated by TCEQ's Toxicology Division. This information was used to develop the framework for the proposed PBR, the specific requirements, and the modeling scenarios used to support the proposed PBR requirements.

To determine what types of planned MSS activities are conducted at OGSs across Texas, the commission analyzed over 1,200 oil and gas projects submitted to the commission between January and March, 2012. Over 375 (approximately 31%) of these recent projects represented planned MSS activities. The representations in the submitted projects helped the commission evaluate which activities are appropriate for authorization under this proposed PBR.

The commission reviewed Chapter 116, Subchapter B, New Source Review Permits, (case-by-case) permits for petroleum refineries to gain additional knowledge regarding possible planned MSS activities at OGSs. Emissions associated with planned MSS activities and facilities at OGSs are similar in nature to planned MSS activities and facilities at refineries and chemical plants. The deadline for petroleum refineries (SIC 2911) to submit applications to authorize planned MSS activities was January 5, 2007. Staff evaluated the planned MSS activities represented for these types of sites to determine if there are similar activities conducted at OGSs. Where comparable, staff

evaluated how the larger facilities are maintained, how emissions are controlled, and any permit requirements specifically applicable to planned MSS activities or facilities. Staff also reviewed publications from the Petroleum Extension Services at the University of Texas at Austin. The publications describe processes for maintaining equipment in the oil field and are focused on startup. Staff reviewed published procedures and controls (best management practices or BMPs) used by service companies that conduct degassing. Staff also reviewed responses to the Barnett Shale Area Special Inventory conducted by the commission in 2010. The study gathered information on facilities and normal production emissions, but did not contain planned MSS activities. Staff reviewed 58 complaint response investigations from the TCEQ Dallas-Fort Worth regional office. These investigation reports included 49 Summa canister samples.

Stakeholder input was instrumental in the development of this proposed PBR. Multiple stakeholder meetings were held, and over 150 people participated in the stakeholder process. The first meeting was held on September 27, 2012, in Austin at TCEQ headquarters with interactive video teleconference available to stakeholders at TCEQ regional offices in Amarillo, Abilene, Beaumont, Corpus Christi, Fort Worth, Houston, Harlingen, Laredo, San Angelo, Tyler, and Waco. The commission conducted additional meetings in San Antonio on October 1, 2012; in the Dallas-Fort Worth area on October 4, 2012; and in the Midland-Odessa area on October 9, 2012.

At these meetings, the commission explained the purpose of the rulemaking and the general concept and held open discussions with stakeholders. The commission also requested and received additional feedback from stakeholders on details of planned MSS activities at their specific locations and the types of maintenance programs used by the industry. The issues and concerns raised during these informal meetings were either used directly to develop the proposed PBR language, or to guide the scope of the authorization mechanism. The commission requests continued stakeholder involvement during the rulemaking process.

THSC, §382.051961(a)(4) requires that the commission consider whether the requirements of this proposed PBR be imposed on particular geographic regions of the state. Based on all of the research, analysis, and stakeholder input, the commission determined that maintenance activities at OGSs are substantially the same across the state. This proposed PBR is based on the permit holder's development of a maintenance program for each site, and compliance will be demonstrated through recordkeeping. It is not intended that the requirements of this proposed PBR be imposed on particular geographic regions of the state. This proposed PBR does not address other authorization types that were previously developed to address high volume urban drilling and contain specific MSS requirements for those conditions.

What typical OGS Planned MSS activities did the commission identify?

The commission identified various planned MSS activities typical to an OGS based on research and stakeholder involvement. In general, planned MSS activities are conducted to ensure proper functioning of facilities at OGSs. The commission found that MSS activities are planned at OGSs for a variety of reasons including: predetermined intervals based on manufacturer specifications or operational knowledge, operational parameters indicating maintenance is warranted, or as a result of operator inspections.

For the protectiveness review, the commission divided planned MSS activities into two general categories based on their potential for emissions. The majority of planned MSS activities fit into the lower emission activities category. Three activities were identified that have the potential for higher levels of emissions: blowdowns, tank or vessel emptying and refilling, and tank or vessel degassing. The character, quantity, dispersion, frequency, and duration of the lower emission activities result in lower emission impacts. Because of the greater potential for impacts, the protectiveness of the higher emission activities was evaluated using modeling and evaluation of credible air monitoring data. Therefore, it was appropriate to rely on the evaluation of the higher emission activities to ensure protectiveness of the proposed PBR.

Lower Emission Activities

The commission identified various planned MSS activities that are conducted to ensure equipment is kept in good working order. These activities have negligible emission

releases, and as a result, are included in this proposed PBR. The commission is also specifically requesting comments on any other processes that should be considered planned MSS activities with the same character and quantity of emissions as the lower emitting activities listed in this proposed PBR. Although the commission cannot materially alter the scope of the proposed rule, the proposed language is intended to account for different processes or maintenance activities with equivalent character and quantity of emissions that may be identified during the comment period. Additional planned MSS activities identified during the public comment period that are within the category of the lower emission activities may be added to the proposed PBR if appropriate.

Examples of activities evaluated resulting in negligible releases of air contaminants in this proposed PBR include: lubrication and cleaning of OGS equipment, oil and oil filter changes for engines and turbines, sparkplug changes, replacement of oxygen sensors, compression checks, use of lubrication oils, leak repairs, engine overhauls, boiler refractory replacements, boiler and heater cleanings, heat exchanger cleanings, and pressure relief valve testing. Other maintenance activities that occur to ensure process equipment operates at optimum levels include replacing treatment chemicals, catalysts, and filters. The term "filters" in this proposed PBR includes pipeline strainers, gas and liquid separators, and hydraulic and lubrication oil filters. Replacement of rod packing, pneumatic controllers, and glycol solution in glycol dehydrator vessels is also included in this category of planned MSS activities.

Relying on extensive research completed for previous rule packages in 2010 and 2011, staff determined that planned startup and planned shutdown emissions from engines and turbines are not expected to be any higher than normal operations. The emissions from operation of engines and turbines were determined to be protective of human health and the environment under the construction authorizations currently available for engines and turbines. Therefore, planned MSS activities for engine and turbine maintenance are authorized under this proposed PBR.

Higher Emission Activities

The commission identified three types of planned MSS activities at OGSs that have the potential for higher emissions: blowdowns, tank or vessel emptying and refilling, and tank or vessel degassing.

Blowdowns

Various types of blowdowns are conducted as needed for maintenance at OGSs, such as compressor blowdowns and piping blowdowns. In addition to being a maintenance activity itself, blowdowns are conducted as the first step of maintenance activities for some OGS equipment. For example, a blowdown to relieve pressure is performed before compressor maintenance can be conducted. Additionally, process vessels under pressure must be opened and degassed before maintenance activities.

Staff evaluated over 250 oil and gas projects that represented compressor or piping blowdowns. Compressor blowdowns release gas through a stack or opening prior to maintenance. Compressor blowdown emissions vary depending on the pressure or liquid that remains in the system before the compressor is shut down. Another factor affecting emissions is how often blowdowns are conducted, which is often dependent upon operational conditions. The typical number of blowdowns per year at a particular site may vary. Representations in the projects evaluated ranged from 12 blowdowns per year to 60 blowdowns per year. The duration of blowdowns also varies. The evaluated projects represented blowdowns lasting from five minutes to one hour. The projects typically represented worst-case scenario (conservative) emissions estimates.

Pipe blowdowns are conducted by draining liquids from the piping or vessel, opening valves, and releasing the gas in the piping. The piping must be cleared of natural gas before associated process vessels under pressure can be opened and degassed. Pipe blowdowns also occur with pigging operations. A device called a pig is inserted into the piping and gas is used to force the pig through the line. The emissions from a pipe blowdown are a function of: the characteristics of what is in the pipeline, the size and length of piping, equipment connected to the system, line pressure, the number of equipment discharges, and the use of blowdown system controls.

In all of the projects reviewed, worst-case scenario or conservative emissions were represented. The emission representations for both compressor and pipeline

blowdowns in submitted projects typically ranged from 0.01 to 25 pounds per hour (lb/hr) of volatile organic compounds (VOC) for short-term (hourly) emissions. Long-term (annual) emissions ranged from 0.01 to approximately 4.0 tons per year (tpy). The commission modeled blowdowns using this data, and the results are included in the Protectiveness Review section of this preamble.

Tanks and Vessels

Facilities such as pressurized and non-pressurized process vessels, associated piping, and fugitive components require periodic inspection, cleaning, and maintenance. Planned MSS activities for tanks and vessels consist primarily of emptying, purging or degassing, cleaning, refilling or recharging, and returning the system to service. The emissions associated with emptying and refilling tanks were less than the emissions from degassing. Therefore, the commission modeled degassing to determine protectiveness of both activities.

Tank or Vessel Emptying and Refilling

The commission evaluated emissions from emptying tanks or vessels, as planned shutdown of these facilities, and the refilling of the tanks or vessels as planned startup.

Based on PBR and standard permit projects, 500 and 1,000 barrel (bbl) fixed roof tanks and 100,000 bbl floating roof tanks were considered, because they are typical tank sizes at OGSs. The minimum short-term emissions are associated with passive vapor

expansion, and are approximately 0.5 to 32 lb/hr of potential VOC emissions. These emissions were calculated using the ideal gas law, which describes how the pressure of the gas is related to the temperature, volume, and amount of substance in the storage tank.

AP-42, Fifth Edition, Section 7 details procedures for estimating emissions from emptying, degassing and refilling tanks. Emissions are estimated using ambient temperature, Reid Vapor Pressure (RVP), true vapor pressure, vapor molecular weight, tank size, and type. Potential emissions from emptying, degassing, and refilling tanks or vessels were estimated using a light condensate oil (industry refers to this as natural gasoline) assuming a molecular weight of 50, a true vapor pressure of 9.11 pounds per square inch absolute (psia) at 95 degrees Fahrenheit and a 60% saturation of the vapor space.

There is an increasing trend of large, floating roof tanks being used in the oil and gas industry. Unlike fixed roof tanks, floating roof tanks minimize vapor space and reduce emissions by allowing the roof to float on the surface of the stored liquid. When the roof is landed for maintenance, vacuum breakers open and the area of the tank below the roof becomes like a fixed volume vessel. Keeping the seals in good working order and landing the roof on its legs are examples of BMPs for tank maintenance.

Occasional, planned operational landing of floating roof tanks will occur, and is considered a planned shutdown activity. The refilling of these tanks is considered planned startup. Short-term emissions from a tank with a landed roof or an empty tank can be greater than the routine operating emissions; therefore it is BMPs that tanks should be filled and back in normal operation as safely and quickly as possible. Staff estimated that quantifying emissions associated with operational landing of floating roof tanks or operational emptying of fixed roof tanks for 50 hours per year is a reasonable approach due to the infrequency of the activity. Estimated emissions associated with these activities were based on these hours and account for the wide variety of tank sizes and types. Convenience landings are not considered operational landings and are not proposed to be authorized under this PBR.

Tank or Vessel Degassing

Degassing (purging), the third planned MSS activity that has the potential for higher MSS emissions is the removal of vapors from storage tanks in order to perform maintenance. Once a tank is emptied, residual liquids are drained from the tank and valves or hatches are opened to release the remaining vapors. Tank clean outs and degassing occur as needed for operations or regulatory compliance. Some tank interiors are cleaned infrequently, such as once every several years, or only before the tanks are moved off site.

Staff evaluated 20 oil and gas projects that represented degassing and purging of fixed roof tanks, floating roof tanks, and vessels such as separators. The commission evaluated non-pressurized tanks degassed with minimal flow rates as well as pressurized tanks and tanks degassed with the use of forced ventilation.

When a fixed volume tank, vessel, or floating roof tank is purged of liquids (except for heels and clingage) the vapor space will be partially saturated with vapors. The level of saturation is dependent on the rate and degree to which the vessel is purged and the length of time after which it is emptied. The standard environmental engineering approach to estimating emissions is an average saturation of 60%. This can be used to estimate the amount of vapor that will be pushed out when the vessel is refilled or degassed. If the tank is not purged by force, then it will have breathing losses associated with passive vapor expansion. The critical factors are the volume of the vessel and the concentration of the vapor, which affect the potential short-term emission rate. If the space is forcefully purged with blowers, which is common for maintenance purposes, it can be completed in a few hours rather than days.

The greater short-term emission rate is associated with degassing using forced ventilation. A purge using a 1,000 cubic foot per minute (cfm) blower for a 500 bbl fixed roof tank would be expected to have approximately 130 lb/hr of VOC for condensate. On larger tanks, a 5,000 cfm blower for a 100,000 bbl floating roof tank would be expected to have approximately 3,850 lb/hr of VOC for condensate. The proposed PBR requires that degassing by forced ventilation and use of vacuum trucks to

empty tanks are limited to a single tank or vessel at a time, based on these emission rates.

Floating roof tanks must be landed before beginning the degassing process. Information gathered during the stakeholder participation process indicated that BMP for degassing large floating roof tanks (100,000 bbl) includes either routing the emissions to a control device or directing the emissions out the top of a tank. This venting method is possible as long as the air flow does not exceed the rating of the vacuum breakers or compromise the integrity of the tank. Allowing degassing at ground level without control can create explosive conditions and expose workers to emission concentrations that exceed standards regulated by the United States Occupational Safety and Health Administration (OSHA). Controlling or directing emissions out the top of a tank is consistent with documented industry practice regarding tank degassing and cleaning.

The stakeholder process identified an additional planned MSS activity that does not fit into the lower or higher emission activities category. Over the past year, investigators in the TCEQ Midland Regional office have identified approximately 20 mobile surface coating operations that are conducting activities at oil and gas sites across the region. Typically the surface coaters are conducting abrasive blasting and coating of both fixed and portable equipment. Many of these sites are located miles away from a permanent surface coating location and it is not economically practical to move the portable

equipment to a permanent surface coating location and then back out to the field. It is likely that this type of activity is being conducted in other parts of the state where the oil and gas industry is operating and abrasive blasting and coating of tanks is a crucial part of tank maintenance. Therefore, the commission evaluated abrasive blasting and coating activities for this proposed PBR.

The preamble to §106.263 (October 26, 2001, issue of the *Texas Register* (26 TexReg 8523)) states that the emissions from blasting and coating fixed objects have a record of insignificant emissions. This same determination is applied in this proposed PBR to include the surface preparation and coating of equipment and supporting structures (buildings or fencing) that is used at the site in oil and gas handling or production. This allows flexibility for oil and gas operators to perform necessary maintenance on equipment used at a location. Limiting surface preparation and coating to equipment used at the site is intended to prevent the site from being used inappropriately as a surface coating facility that would require construction authorization.

What does the proposed PBR require?

Based on the analysis of modeling data and correlated monitoring and sampling data, the required use of BMPs will result in reduced short-term and long-term emissions from OGSs. Monitoring data indicates that emissions at levels of concern predominately result from sites that are not properly maintained or that do not follow BMPs. Authorized emissions from planned MSS activities are short term and result in

reduced overall emissions and environmental impact. Therefore, there are no specific hourly emission limits in this proposed PBR. A distance limitation will not be included in this proposed PBR because the construction authorizations for oil and gas facilities already include appropriate distance limits. Permit holders will be required to develop a maintenance program, comply with the recordkeeping requirements in §106.8 (Recordkeeping) and the site-wide emission limits in §106.4 (Requirements for Permitting by Rule).

An owner or operator of an OGS that claims planned MSS emissions under this proposed PBR will be referred to as the permit holder. The proposed PBR will require that the permit holder develop and implement a maintenance program and use BMPs to minimize emissions. A variety of activities can be considered BMPs, for example: timeframes for maintenance activities, prohibition of certain practices, maintenance procedures, operating procedures, and other techniques to control, prevent, or reduce the emission of regulated air contaminants. BMPs may include: following manufacturer's specifications and recommendations or following an operator-developed maintenance program consistent with good air pollution control practices for repairing and maintaining equipment performance, cleaning and routine inspection of all equipment, monitoring operational parameters to predict maintenance needs, closing thief hatches, and handling liquids properly. The proposed PBR will not prescribe all of the specific BMPs that must be followed at each OGS; rather a permit holder will be responsible for determining the appropriate BMPs to minimize emissions, according to

industry-wide standards. Recordkeeping will be the primary method for demonstrating compliance with the proposed PBR. Regulating planned MSS emissions through a maintenance program affords flexibility and allows permit holders the ability to adapt the maintenance program as necessary with regard to planned MSS activities.

Planned MSS emissions that meet the conditions of the proposed PBR will not require notification or registration. No paperwork is required to be submitted to the commission. The ability to claim and not register emissions under specific PBRs has historically been an acceptable option and it is intended that this option be available as part of this proposal.

In the general rule to claim a PBR, §106.8 addresses the recordkeeping requirements, which are intended to provide a clear, understandable set of expectations in order to easily demonstrate compliance. Section 106.8 provides explicit requirements and meets the test of practical enforceability, an essential element for all commission authorizations. All necessary records must be kept and contain sufficient information to demonstrate compliance. These records serve to: verify all information used to estimate emissions; verify that planned MSS emissions meet all applicable limits; list current equipment and processes; explain equipment or process changes and associated effects on emissions; and demonstrate that equipment is properly operated, monitored, maintained, and inspected. Any records that are kept for other purposes but provide the

required information to support the use of BMPs are sufficient to demonstrate compliance with this proposed PBR.

Additionally, many planned MSS activities (such as blowdowns) are practically and physically indistinguishable from those that occur as a result of emissions events. Therefore, it will be important for the permit holder to record the reason for the planned MSS activity, demonstrating that it meets the requirements of this PBR. In some instances, adequate notice will be given to a permit holder that upstream or downstream actions may result in the need for planned MSS activities at the permit holder's OGS. If adequate notice is given for the affected permit holder to plan a response, minimize the frequency and duration of emissions, and the emissions do not exceed the limits in §106.4, then the activities may be claimed as planned MSS. Records of this notification must be kept to claim the emissions as planned MSS emissions under the proposed PBR.

Because some oil and gas permit holders may not have included planned MSS emissions in their evaluation to determine the appropriate construction authorization, site-wide emissions may need to be recalculated to account for the planned MSS emissions and ensure compliance with any construction authorization limitations. Specifically, in accordance with §106.4, total actual emissions authorized under PBR from the facility shall not exceed 250 tpy of carbon monoxide (CO) or nitrogen oxides (NO_X); or 25 tpy of VOC, sulfur dioxide (SO_2), or inhalable particulate matter (PM); or 15 tpy of particulate

matter with diameters of 10 microns or less (PM_{10}); or 10 tpy of particulate matter with diameters of 2.5 microns or less ($PM_{2.5}$); or 25 tpy of any other air contaminant except carbon dioxide, water, nitrogen, methane, ethane, hydrogen, and oxygen, unless at least one facility at a site has been subject to public notice and comment as required in Chapter 116, Subchapter B or Subchapter D (Permit Renewals). Section 106.4(b) requires that no person shall circumvent by artificial limitations the requirements of §116.110 (Applicability). Permit holders may be required to provide documentation demonstrating site-wide emission totals if requested by commission staff or the local air pollution control program with jurisdiction.

Site-wide emission totals, including planned MSS emissions calculations, should be supported with as much site-specific or representative sampling and testing needed to perform such emissions calculations. For example, a site with an outlet gas stream from a high pressure separator, outlet gas stream from a glycol unit, outlet gas stream from an amine unit, and outlet gas stream from a low pressure separator may require sampling and testing for all four gas streams to sufficiently complete emissions calculations for pipeline blowdowns. Failure to sample at the appropriate location can result in a mischaracterization and incorrect quantification of emissions.

While the proposed PBR does not require registration or the submission of emission calculations to the commission, the site-wide emissions will need to be quantified to verify the site is operating under the appropriate construction authorization. Planned

MSS emissions must be based on a worst-case annual emissions total. For example, planned MSS activities that only occur once every ten years cannot be averaged out over a ten-year period. Emissions from such an event must be considered as part of a worst-case annual emission total and must be accounted for, in its entirety, to support Chapter 106 compliance.

The commission has historically accepted worst-case emissions quantifications for similar units at a site. This reduces the burden on permit holders for emission calculations. Compliance may continue to be demonstrated using worst-case scenario emission estimates. For example, if an OGS has 20 pumps at a site and all of the pumps require a similar maintenance activity, a permit holder could determine which pump emitted the highest volume of emissions during that activity and use that as a worst-case representation for the same activity performed on the other pumps at the site. This same representation can then be used for pumps at other sites the company controls if the emissions are representative.

A permit holder with 30 predicted annual activities could conservatively plan on 40 annual activities to account for circumstances that could cause an increase in planned MSS activities for these specific facilities. While site-specific emissions are preferred, permit holders could use a liquid and gas analysis from a representative site consistent with commission guidance. This will alleviate some of the calculation burden on permit holders, while ensuring compliance with the emission limitations in §106.4.

Additionally, the commission has created an emission calculation spreadsheet for use in estimating emissions from sites involved in the production of oil and gas. The purpose of this tool is to determine compliance with PBR or standard permit emission limits and to help quantify planned MSS emissions. The spreadsheet is available on the TCEQ Web site at: *www.TexasOilandGasHelp.org*.

In certain circumstances, certification of emissions may be appropriate for sites previously claiming a construction authorization. The certification is not required but is recommended for OGSs whose cumulative site-wide emissions are within five tpy of any applicable general limit of an authorization mechanism. Facilities may limit the potential to emit (PTE) by calculating emissions based on a planned number of events. If a site's PTE is at or above the limitations of the authorization mechanism currently used for that site, the permit holder must either obtain a new authorization or lower the site's PTE, by certification, to avoid triggering a new authorization mechanism. There is no cost to certify emissions.

In order to clarify the intent of the commission's recommendation for certain sites to certify emissions, examples are provided below. Additional information can be found on the APD-CERT form (TCEQ-10489).

First, if a project includes control technology, limited hours, throughput, and materials or other operational limitations, in order to limit the PTE, the United States Environmental Protection Agency's (EPA) guidance is clear that these limitations must be federally enforceable. Certified emissions are federally enforceable. For example, if a site requires the use of a control device in order to meet the applicable general limit of an authorization mechanism, the commission recommends a permit holder certify the destruction and/or capture efficiency of the control device.

Second, a permit holder may want to voluntarily establish federally enforceable planned MSS emission limits for air pollutants to demonstrate the site is a minor source for purposes of the Title V federal operating permit program.

Third, if a project is in an Air Pollutant Watch List area and has increases or decreases in emissions of any of the area's pollutants of concern as a result of planned MSS activities, it is recommended the representations be federally enforceable through certification.

Fourth, if a project is located at a site subject to NO_X Cap and Trade requirements in Chapter 101, the amount of NO_X subject to that program must be federally enforceable. Any increase or decrease in NO_X emissions from planned MSS activities would therefore be required to be federally enforceable.

What other rules apply to sites claiming this proposed PBR?

It is intended that this proposed PBR will be used in addition to a construction authorization at an OGS. In addition to the requirements in Chapter 106 to claim the proposed PBR, all facilities and sources in Texas must comply with the applicable requirements in 30 TAC Chapter 101, General Air Quality Rules. The most common parts of Chapter 101 affecting OGSs are §101.4, Nuisance; §101.10, Emissions Inventory Requirements; and §101.201, Emissions Event Reporting and Recordkeeping Requirements. Potential nuisance conditions from activities in the oil and gas industry include odors, smoke, and dust from in-plant roads, work areas, and traffic.

All sites in Texas must comply with opacity limitations in 30 TAC Chapter 111, Control of Air Pollution from Visible Emissions and Particular Matter. All OGSs, especially sour sites, must ensure compliance with the ambient air quality standards in 30 TAC Chapter 112, Control of Air Pollution from Sulfur Compounds. OGSs in certain areas must comply with various standards in 30 TAC Chapter 115, Control of Air Pollution from Volatile Organic Compounds; and 30 TAC Chapter 117, Control of Air Pollution from Nitrogen Compounds.

Federal rules may also apply. Federal standards applicable to OGSs can be found in 40 Code of Federal Regulations (CFR) Part 60, New Source Performance Standards (NSPS), and 40 CFR Parts 61 and 63, National Emissions Standards for Hazardous Air Pollutants (NESHAP). Certain activities required under federal rules may be considered

planned MSS activities and authorized under this proposed PBR. For additional information about rules that may apply to OGSs, visit *www.TexasOilandGasHelp.org*.

Protectiveness Review

Modeling and Monitoring

After the commission assessed typical planned MSS activities conducted at OGSs, the emissions associated with these activities were evaluated for inclusion in the proposed PBR. The protectiveness review focused on blowdowns and tank or vessel degassing because they were identified as the sources of the highest emissions related to planned MSS activities.

THSC, §382.051961 requires that the commission review credible air quality monitoring and modeling data in order to determine that emissions limits or other emissions-related requirements of the proposed PBR are necessary to protect public health and the environment. In developing the protectiveness review, the commission incorporated both modeling and monitoring information from three sites in the Air Quality Analysis (AQA), conducted a case study of Automatic Gas Chromatographs (AutoGCs) monitoring data from emission events, reviewed monitoring data near a tank farm, reviewed complaint investigation reports with associated summa canister air samples, and reviewed the state-wide benzene emissions data evaluated by the TCEQ's Toxicology Division.

In the air permit process, the commission uses short-term and long-term effects screening levels (ESLs) to evaluate modeling of proposed emissions for their potential to adversely affect human health and the environment. For evaluation of air monitoring results, air monitoring comparison values (AMCVs) are used to assess the potential for exposure to the measured concentrations to adversely affect human health and the environment. When developing individual permit requirements, modeled potential emissions are compared to the applicable ESLs so that when multiple sources are in an area, monitored emissions will be below the applicable AMCVs. The long-term ESL and long-term AMCV for benzene are both 1.4 parts per billion (ppb) or 4.5 micrograms/cubic meter ($\mu g/m^3$). The short-term ESL for benzene is 54 ppb (170 $\mu g/m^3$) and the short-term AMCV is 180 ppb (580 $\mu g/m^3$).

The AQA was performed using AERMOD (version 12060). AERMOD is based on the Gaussian distribution equation and is inherently conservative due to the main simplifying assumptions made in its derivation: conditions are steady-state (for each hour, the emissions, wind speed, and wind direction are constant) and the dispersion from source to receptor is effectively instantaneous; there is no plume history as model calculations in each hour are independent of those in other hours; mass is conserved (no removal due to interaction with terrain, deposition, or chemical transformation) and is reflected at the surface; and plume spread from the centerline follows a normal Gaussian distribution and only vertical and crosswind dispersion occurs-dispersion downwind is ignored.

To determine which contaminants would be modeled for the AQA, the commission first determined which speciated VOC would be the contaminant of concern. In the recent rule package for PBR, §106.352, effective February 27, 2011, numerous speciated VOCs (benzene, toluene, ethylbenzene, xylenes, propane, butane, and others) were evaluated using representations from projects and hypothetical cases based on concentration percentage and associated ESL. In almost every instance, the compound benzene was identified as the contaminant of concern before any other VOC compound. The annual (long-term) ESL for benzene is substantially lower than any of the corresponding ESLs for other air contaminants expected to be emitted at an OGS. Therefore, the commission determined that conducting a protectiveness review of benzene is appropriate for demonstrating that planned MSS activities at OGSs do not adversely affect human health and the environment. To analyze the annual acceptable emissions of benzene, both the hourly and annual impacts were evaluated for protectiveness.

Assuming 1% of VOC emissions are benzene provides a conservatively high benzene emission rate. This assumption is used when direct measurement or sampling is unavailable. This percentage was used as the basis for emission estimates of benzene from VOC.

The AQA included an evaluation of information from TCEQ's Barnett Shale Formation Tank Battery Monitoring Project from July 2010 to develop modeling for two of the sites presented in the project.

The first site is the Chesapeake Energy Little Hoss Lease, located in Johnson County, approximately 1.75 miles west of State Highway 171. Monitoring at this location was conducted from Noon on July 12 to Noon on July 13, 2010.

The second site is the ConocoPhillips Company Gage Pitts Lease, located in Wise County, approximately one half mile south of US Highway 380. Monitoring at this location was conducted from 12:15 pm on July 14 to 12:15 pm on July 15, 2010.

The commission used the monitoring project to develop a representative modeling scenario for evaluating planned MSS tank degassing activities. In order to develop the representative modeling scenario, the commission placed off-property receptors at the same location as the monitors in the study. A tank thief hatch adapter sampling apparatus was installed at the two sites for the monitoring project and was the source of emissions evaluated in the representative modeling analysis. The commission used photographs included in the monitoring report and aerial photography to locate the sources. The commission modeled the tank thief hatch adapter as a point source with pseudo point parameters using emission rates from contractor information. The modeling used meteorological data from the same period as the monitor study. The

Little Hoss evaluation used surface data from Granbury Regional Airport (station #53977). The Gage Pitts evaluation used surface data from Decatur Municipal Airport (station #53694). Both evaluations used upper air data from Fort Worth (station #3990). These meteorological stations are the closest Automated Surface Observing Systems (ASOS) stations to each location.

Using the representative parameters, the commission conducted modeling and compared the model results to the monitored values to evaluate model performance. The predicted concentrations were added to the concentration from up-wind monitors, and the total concentrations were generally within 20% of the monitored value with the exception of one receptor at the Little Hoss Lease. The predicted concentration at this receptor was approximately two times greater than the monitored value. Because the model results were within the generally accepted limit of model performance (within a factor of two), the commission used the model setup to evaluate benzene emissions from typical tank degassing activities. Although there may be several tanks at a site, tank degassing typically will not occur simultaneously at more than one tank at a site at a time.

The commission evaluated four degassing activity scenarios at the Little Hoss and Gage Pitts locations: unassisted degassing from a fixed roof tank less than or equal to 500 bbl, forced ventilation degassing from a fixed roof tank less than or equal to 500 bbl, forced ventilation degassing from a 1,000 bbl fixed roof tank, and forced ventilation degassing

from a 100,000 bbl floating roof tank. The modeling used a point source with pseudo point parameters to evaluate the unassisted tank degassing activity, a point source with representative parameters for the forced ventilation degassing of 500 bbl and 1,000 bbl tanks, and a volume source for the degassing of a 100,000 bbl floating roof tank. Receptors were placed at 50-foot intervals beginning at the property line and extending a quarter mile from the property line. The modeling used the same meteorological stations as the representative modeling scenario, but was conducted for an entire year, specifically 2010. The predicted benzene concentrations for the unassisted tank degassing scenario were all less than the ESL for benzene. The maximum predicted hourly concentrations for the forced ventilation tank degassing scenario from fixed roof tanks approximately 14 times the short-term ESL for benzene.

The commission modeled the 100,000 bbl floating roof tank release height at 40 feet (top of the tank) based on industry representations of BMPs and research conducted by staff on tank degassing activities. The maximum predicted hourly concentrations for the floating roof tank degassing scenario was approximately 21 times the short-term ESL for benzene. However, the frequency of ESL exceedance is only one hour per every ten years for each tank degassing activity. The predicted annual impacts are below benzene's ESL. The TCEQ Toxicology Division reviewed the modeling results and has determined that tank degassing that complies with the conditions in the proposed PBR are expected to be protective of human health and the environment.

The AQA also evaluated planned MSS activities at the Ponder Compressor Station, located in Ponder, Denton County. The Ponder Compressor Station is located approximately 1,100 feet south-southeast of the AutoGC Monitor at the Dish Airfield (CAMS 1013). The commission reviewed a recent standard permit application for the site and used parameters represented in the application to evaluate benzene emissions from blowdown activities. Staff used 12 months of actual blowdown records, which indicated that a typical blowdown at this site lasted less than five minutes and resulted in an average of 12.64 lb/hr of VOC emissions. There were 35 blowdowns in the 12 months of data evaluated. The blowdown activity was modeled as a point source with the parameters represented in the application. Blowdown activities may occur up to 60 times per year, with typically one blowdown in an hour for a duration of five minutes. The Ponder evaluation used 2011 meteorological surface data from Denton Municipal Airport (station #3991) and upper air data from Fort Worth (station #3990). The surface station is the closest ASOS station, at approximately eight miles to the north. The commission located receptors at 50-foot intervals beginning at the property line and extending a quarter mile from the property line, as well as an additional receptor at the location of the Dish Airfield Monitor. The maximum hourly monitored value for 2011 is 8 $\mu g/m^3$. The maximum predicted concentration from the modeling at the location of the monitor receptor is 9.25 $\mu g/m^3$. The maximum predicted concentration at any receptor is 160 $\mu g/m^3$, which is less than the short-term ESL for benzene.

Case Studies: Emission Events and Various Monitoring

A case study to examine the effect of emissions events on nearby monitors was conducted. While this proposed PBR will not authorize emissions events, the reporting requirements for these events provided staff with an estimated amount of emissions and a defined time of release. Staff reviewed these emissions events to evaluate the impact on monitors from benzene emissions as a proxy for evaluating planned MSS emissions.

The monitors used in this research were AutoGC because they provide the most usable, consistent data with regard to the activities being evaluated for the proposed PBR. Because the activities being evaluated for the PBR are typically less than 24 hours in duration, AutoGCs are the ideal monitoring equipment type. AutoGCs are designed to collect data at a given sampling location over time and provide hourly measurements, seven days a week.

Once the appropriate AutoGC monitors were selected, the commission identified sites reporting estimated benzene emissions resulting from emission events. In order to determine the benzene effects associated with planned MSS activities staff compared the associated benzene emission events at these sites to the collected, verified AutoGC monitoring data.

An emissions event at a site located approximately 2,000 feet northwest of the Oak Park Monitor in Corpus Christi, Texas was evaluated. This site reported a release of

approximately 94 pounds of benzene over a 13.5-hour period. Wind direction during this event was consistently coming from the northwest, which would carry emissions from the site towards the monitor. The highest detected benzene concentration at the monitor during the event was 0.78 ppb.

An emissions event at a second site located approximately 4,000 feet northeast of the Solar Estates Monitor in Corpus Christi, Texas was also evaluated. This site reported a release of 15 pounds of benzene over a 1.5 hour period. During this time period, wind direction was consistently coming from the northeast, which would carry emissions from the facility towards the monitor. The highest detected benzene concentration at the monitor during the event was 0.19 ppb. This site reported a second release of 3.9 pounds of benzene over a 40-minute period. During this time period, wind direction was consistently coming from the northeast. The highest detected benzene concentration at the monitor during the event was 0.46 ppb. This site reported a third release of 7,900 pounds of benzene over a three-hour period during the event. During this time period, wind direction fluctuated but was coming from the northeast towards the monitor when the AutoGC took the air sample. The detected benzene concentration at the monitor during that measurement was 1.80 ppb. All of the monitored values during the case study emission events were below the short-term AMCV for benzene.

The emissions event estimate (7,900 lb of benzene/three hours) represents a much greater amount than is expected for any planned MSS activities at OGSs. The highest planned MSS activity at OGSs was approximately 38 lbs of benzene in one hour, which

is 1% of the total 3,850 lb/hr of VOC estimated from using forced ventilation to degas a 100,000 bbl floating roof tank. Therefore, the emissions from planned MSS are less than 1% of the emissions from the event in the case study and would be expected to be monitored below the short-term AMCV.

In addition to the monitoring data associated with emissions events, staff reviewed data from a monitor located between two large tank batteries. Staff evaluated 12 months of validated data from the Huisache monitor in the Corpus Christi area. The two tank batteries are part of two large refineries that conduct tank degassing activities at a higher frequency than expected at an OGS. Based on permit representations, degassing activities occur at these facilities because of regulatory requirements and because of frequent changes of service. Although degassing of tanks storing high vapor pressure compounds is controlled, and despite not having any site-specific data for an OGS near one of these monitors, it is likely that multiple degassing events of large tanks took place in the 12 months for which data was evaluated. The monitoring data did not show any exceedances of the short-term AMCV for benzene for the 12 months evaluated.

Additionally, staff reviewed 58 complaint response investigations from the TCEQ Dallas-Fort Worth regional office. Of the 58 investigations, 49 included the collection of Summa canister samples that were subsequently analyzed. Summa canisters are air monitoring tools the commission uses to collect air samples and analyze them for the possible presence of various air contaminants. The time of sample collection can range from a few seconds to 30 minutes. The samples from the investigations were analyzed

for elevated concentrations of 84 petroleum-related compounds (propane, isobutene, n-butane, or benzene). The analysis of the Summa canister samples did not show any elevated concentrations of petroleum-related compounds associated with planned MSS activities.

State-wide Benzene Emission Summary

The toxicology analysis of monitored benzene emissions state wide shows an overall trend of improvement. In 2011, benzene emissions at all monitors were below the long-term AMCV of 1.4 ppb. The intent of this PBR is to ensure that equipment and facilities at OGSs are operating in good working order and that unauthorized emissions caused by equipment failure are minimized, so that monitored benzene emissions continue to show improvement. Additional details on particular areas can be found on the TCEQ Web site *www.tceq.texas.gov/toxicology/regmemo/AirMain.html*.

Section Discussion

Section 106.359, Planned Maintenance, Startup, and Shutdown (MSS) at Oil and Gas Handling and Production Facilities

The commission proposes new §106.359 to authorize emissions from planned MSS activities at various oil and gas handling and production facilities. This proposed PBR is intended to cover all known planned MSS activities at OGSs. However, permit holders must comply with the general requirements to claim a PBR, in Chapter 106, which include recordkeeping and meeting site-wide emissions limits.

Proposed §106.359(a) establishes the applicability of this PBR to certain OGSs. Proposed subsection (a) will require permit holders to follow all conditions in the PBR to authorize planned MSS emissions at a site. If the permit holder does not comply with all conditions in the PBR (such as development and implementation of the maintenance program and adequate recordkeeping to demonstrate compliance), emissions from planned MSS activities will not be authorized.

The THSC, §382.051962 definition of planned MSS activities used in this proposed PBR differs from the §101.1 (Definitions) of scheduled MSS activity. In §101.1, scheduled MSS is defined as unauthorized emissions. Once a permit holder authorizes planned MSS activities, the requirements in §101.211 (Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements) do not apply. Planned MSS activities are routine and predictable, but not necessarily scheduled for a specific date in the future.

OGSs operating under several available construction authorizations may be eligible to claim the proposed PBR to authorize planned MSS emissions. This proposed PBR may be used with historical standard exemptions for oil and gas facilities. This proposed PBR may also be used with current PBRs: §106.351, Salt Water Disposal (Petroleum); §106.353, Temporary Oil and Gas Facilities; §106.354, Iron Sponge Gas Treating Unit; §106.492, Flares; §106.511, Portable and Emergency Engines and Turbines; and §106.512.

OGSs that claim §106.352(l) may be eligible to claim the proposed PBR. However, OGSs that are required to register under §106.352(a) - (k), effective November 22, 2012, or the non-rule Air Quality Standard Permit for Oil and Gas Handling and Production Facilities, effective November 8, 2012, have planned MSS addressed in those authorizations and are not eligible to use the proposed PBR. Sites that are located outside of the counties listed in §106.352(a)(1) that have voluntarily registered under the §106.352(a) - (k), or the non-rule Air Quality Standard Permit for Oil and Gas Handling and Production Facilities, may opt to claim §106.352(l), or the standard permit in §116.620, if eligible, and claim this PBR to authorize planned MSS emissions.

The PBR §106.355, Pipeline Metering, Purging, and Maintenance, authorizes sections of pipelines between sites. These sources should continue to use that authorization and are not eligible to claim this proposed PBR.

Tanks that are authorized under §106.478, Storage Tank and Change of Service, or other PBRs in Chapter 106, Subchapter U (Tanks, Storage and Loading) have historically been eligible to authorize planned MSS activities under §106.263. This will not change as a result of this proposed PBR. The applicability of these PBRs is broader than OGSs. Sites authorized under PBRs in subchapter U will not be eligible to authorize planned MSS activities under the proposed PBR. The intent of the proposed PBR is to limit the applicability to certain oil and gas handling and production facilities or sites including

but not limited to tank batteries between sites that handle liquids from oil and gas production, and not necessarily tank farms holding final product. However sites authorized under PBRs under subchapter U that can meet the requirements of §106.352(l) may opt to re-register their site under §106.352(l) and claim this proposed PBR for planned MSS authorizations.

The proposed PBR will be available for OGSs authorized under the standard permit in §116.620, effective September 4, 2000.

If certain planned MSS activities were claimed as part of a previous authorization under historical standard exemptions, PBRs, or standard permits, permit holders may switch to this proposed PBR. However, proposed subsection (a)(2) prohibits the removal of emission control methods and emission increases from existing planned MSS activities authorized under this proposed PBR. This proposed PBR specifically addresses all planned MSS activities at OGSs, and ensures they are protective. The requirement to develop a maintenance program and keep records provides flexibility while not overburdening permit holders and the commission with unnecessary paperwork.

Facilities or sites authorized under case-by-case permits will be able to authorize certain planned MSS emissions under this proposed PBR. The proposed PBR will not authorize planned MSS emissions which exceed the limits represented and established in the case-by-case permit, or specific planned MSS activities already authorized under the case-by-

case permit. However, planned MSS activities that are not included in the case-by-case permit may be authorized under the proposed PBR. The normal permitting process requires that activities at a site that are authorized under PBR be addressed at the next permitting action. The intent of limiting the proposed PBR's use with OGSs that have case-by-case permits is to ensure protectiveness and prevent stacking (the authorization of additional emissions above those addressed in the case-by-case permit review). However, activities not previously identified in the permit application may be authorized under the proposed PBR and addressed at the next permit action. For example, if an OGS represented ten blowdown activities and the associated emissions from those blowdowns were evaluated for protectiveness, then it would not be appropriate to use the proposed PBR to authorize additional blowdown activities that were not accounted for in the case-by-case permit impacts review.

Additionally, if a planned MSS activity is authorized in a case-by-case permit, companies may not alter the permit to delete the activities and claim them under this proposed PBR while continuing to authorize the facilities or a portion of them in the case-by-case permit. This is consistent with the memorandum on "Voiding Permits and Claiming Permits by Rule or Standard Permits" dated December 9, 2005. The memorandum is available on the TCEQ Web site at *http://www.tceq.texas.gov/permitting/air/memos/pbr_memos.html.*

This proposed PBR will not authorize emissions associated with emissions events, malfunctions, upsets, unplanned startup, unplanned shutdown, or unplanned maintenance activities that require immediate corrective action. An upset event is the unplanned and unavoidable breakdown of a process that releases unauthorized emissions of air contaminants. For additional information, see §101.10, Definitions and §101.201, Emissions Event Reporting and Recordkeeping Requirements. However, if a permit holder conducts planned maintenance on an accelerated timeframe while a facility is shutdown because of an emissions event, the planned maintenance as documented in the permit holder's maintenance plan and the subsequent startup of the facility may be claimed as planned maintenance and planned startup covered by this authorization.

Alternate operating scenarios are not considered planned MSS activities and emissions associated with them are not authorized under this proposed PBR. The maintenance activity performed on a piece of control equipment, can be considered a planned MSS activity; however the emissions released from the normally controlled facilities during this downtime are considered an alternate operating scenario and not a planned MSS activity. For example, for 50 weeks out of the year, a vapor recovery unit controls a series of tanks. For the other two weeks the vapor recovery unit undergoes maintenance and the tanks are not controlled, but vented to the atmosphere. This is considered two operating scenarios: the normal operating scenario (tanks controlled) and the alternate

operating scenario (tanks not controlled). Both scenarios should be reflected as production emissions from tanks and are not considered planned MSS activities.

It is not the commission's intent to aggregate emissions from different sites. THSC, §382.051964 and 30 TAC Chapter 122 (Federal Operating Permits Program) place specific limitations on the aggregation of oil and gas facilities and sites, respectively.

Proposed subsection (b) establishes the types of planned MSS activities and facilities that are intended to be eligible for authorization under the proposed PBR. The list of activities included in the proposed PBR was developed through research conducted by the commission and from stakeholder input.

The intent of this subsection is to provide a clear and simple list of the types of activities and facilities that may be authorized under the proposed PBR. This subsection is comprised of three groups of planned MSS activities. Subsection (b)(1) - (5) lists the planned MSS activities that are considered lower emitting activities. Proposed subsection (b)(6) includes activities with the same character and quantity of emissions as those listed under proposed subsection (b)(1) - (5) to allow flexibility for planned MSS activities that are protective because of their negligible emissions. Proposed subsection (b)(7) - (9) addresses planned MSS activities that have a greater potential for emissions - the higher emitting activities. Subsection (b)(10) addresses abrasive blasting and coating for maintenance.

The list of planned MSS activities in subsection (b)(1) - (5) covers a range of lower emitting activities. For example, subsection (b)(1) lists planned engine maintenance as an activity eligible for authorization under the proposed PBR. Planned engine maintenance can include filter changes, oxygen sensor replacements, compression checks, overhauls, lubricant changes, spark plug changes, rod packing, emission control system maintenance, and facilities used for testing and repair of engines and turbines. These activities are considered BMPs to keep an engine operating properly and in good working order. Similar BMP activities for boilers, heater and heat exchangers, and turbine hot section swaps will also be eligible for authorization under the proposed PBR.

Proposed subsection (b)(2) authorizes the planned repair, adjustment, calibration, lubrication, and cleaning of process equipment at an OGS. This paragraph is intended to authorize these maintenance activities for the numerous facilities found at an OGS. Repairing, adjusting, calibrating, lubricating, and cleaning of facilities are common BMPs to keep equipment in good working order.

Proposed subsection (b)(3) - (4) authorizes planned replacement of certain facilities at OGSs. Examples of replacements included as planned MSS include: piping components, pneumatic controllers, wet and dry seals on turbines, meters, instruments, analyzers, screens, filters, boiler refractories, and turbine or engine hot section swaps.

Planned turbine and engine hot section swaps are authorized under the proposed PBR as maintenance consistent with current commission guidance. To ensure proper maintenance, good operation, and to limit petroleum production interruptions, portions of turbine and engine sets used by the oil and gas industry are commonly replaced with components that have been rebuilt off-site. In these cases, no changes are made to the supporting equipment (anchors, piping connections, fuel system, lubrication system, control system, structure, skids, and inlet and exhaust ducts) which allows the combustion device to operate. The replacement combustion, compressor units, or power turbines are typically of the same horsepower, operate in the same manner, and have equal or less emissions than the original devices (in-kind). The new components operate in the same manner, provide no increase in throughput, and have equal or less emissions with no different characteristics than the original devices. Under THSC, §382.003(9) and 30 TAC §116.10(11) (General Definitions) exchanges of in-kind components that do not increase the amount or change the character of emissions are not considered a "modification". Planned replacement of engine and turbine components should be considered a maintenance activity. The replacement of existing permitted engines and turbines with in-kind facilities results in no environmental changes. To maintain good operation, the existing facilities need to undergo maintenance or rebuilding and if not replaced, would likely emit higher amounts of air contaminants to the atmosphere over time. This is consistent with the memorandum on "Replacement of All Engine and Turbine Components for Oil and Gas Production - Revised" dated September 1, 2005. The memorandum is available on the TCEQ Web

site at

http://www.tceq.texas.gov/assets/public/permitting/air/memos/replacement.pdf.

Replacement of other equipment not listed in the proposed PBR would require evaluation of the need for a construction authorization. For example, replacement of a glycol dehydrator originally authorized by a standard permit will require a revision to the standard permit. The intent is to authorize the BMPs that are integral to proper operation of equipment and to ensure that unauthorized emissions events caused by equipment failure are minimized. The maintenance program should address the predicted frequency of these types of planned MSS activities, and logs should be kept of these activities to demonstrate compliance with this proposed PBR.

Proposed subsection (b)(5) addresses piping that is used during planned MSS activities. The construction and use of piping that is necessary to bypass a facility, or piping section that is undergoing maintenance is authorized under the proposed PBR. This bypass piping may allow materials to be directed around a process unit or control device for the period of time when maintenance is occurring. The commission does not consider the piping to be an alternate operating scenario, but rather a BMP to minimize emissions during planned MSS activities. The records in the maintenance program should demonstrate when the bypass piping is used for planned MSS. However, a permanent bypass pipeline not being used for maintenance is not authorized under this PBR. This scenario is an alternate operating scenario and fugitive emissions associated

with the use of this bypass pipeline should be authorized under the construction authorization.

The list of activities in the proposed PBR is not all inclusive. Under proposed subsection (b)(6), the commission intends to allow planned MSS activities that are the same in character and quantity of emissions as the types of activities listed in proposed subsection (b)(1) - (5) to be authorized by the proposed PBR. The character, quantity, dispersion, frequency, and duration of the lower emission activities will result in less emission impacts than higher emission activities, and ensures protectiveness. Planned MSS activities that are within the scope of the protectiveness review conducted for these activities may also be authorized using the proposed PBR, even if they are not specifically listed. This flexibility will allow for advances in industry planned MSS technology while still remaining protective. Unauthorized emissions resulting from upsets will not be authorized by this proposed PBR, even if the emissions are the same in character and quantity as those reviewed for protectiveness. The resetting of pressure relief devices to a closed position and sealing the vessels and piping are BMPs. However, emissions from activation of a pressure relief device may be an emissions event.

Proposed subsection (b)(7) includes the emissions from the pigging and purging of piping at a site if it is planned MSS activity or facility. Before piping can be taken out of service for operational or maintenance purposes, it must be "purged" or depressurized

by venting the natural gas to the atmosphere. To effectively purge the pipeline, a device (pig) is inserted into the line and gas is used to force the pig through the line. In addition to purging the gas in the line, pigging for maintenance also scrapes off solid deposits and pushes liquids through a multi-phase pipeline. Operational pigging is considered startup or shutdown activities for the purposes of the proposed PBR. Startup or shutdown pigging can include pigging for separation of products as well as separation of product quantity.

The emissions generated by purging are a function of the pipe diameter, length, and pressure. To demonstrate compliance with proposed subsection (d), records should be kept detailing the date and time of each pigging occurrence with corresponding pipeline diameter, length, and pressure. These records are important to determine the site-wide emissions totals to demonstrate compliance with the general requirements to claim this proposed PBR as well as the construction authorization for the production emissions at the site.

Proposed subsection (b)(8) addresses equipment blowdowns. Various types of equipment blowdowns were evaluated for this proposed PBR. Examples of blowdowns typically conducted at OGSs include compressor blowdowns, vessel blowdowns, and piping blowdowns. Liquids drained out of pipelines or vessels to prepare for blowdown activities should be drained off to a container and handled properly. The commission expects negligible emissions from the liquids.

Many planned MSS activities (such as blowdowns) are practically and physically indistinguishable from those that occur as a result of emissions events. Therefore, it will be important for the permit holder to record the reason for the planned MSS activity, demonstrating that it meets the requirements of this PBR, specifically proposed subsection (d). In some instances, adequate notice will be given to a permit holder that upstream or downstream actions may result in the need for planned MSS activities at the permit holder's OGS. If adequate notice is given for the affected permit holder to plan a response, minimize the frequency and duration of emissions, and the emissions do not exceed the limits in §106.4, then the activities may be claimed as planned MSS. Records of this notification must be kept to demonstrate that the emissions were associated with a planned MSS activity.

To demonstrate compliance with proposed subsection (d), records for blowdowns must be kept of the date, time, and equipment, and should demonstrate the permit holder is following the maintenance program as required in proposed subsection (c)(2). Also, because blowdowns may be a result of upsets or unplanned maintenance at the site, information reflecting the cause or reason for the blowdown must be part of the record.

Proposed subsection (b)(9) addresses authorization of emptying, purging, degassing, or refilling of tanks or vessels. Based on the research and the protectiveness review conducted by the commission, emptying and degassing of tanks and vessels typically

located at OGSs are covered under this proposed PBR if the conditions and BMPs listed in the PBR are followed. Proposed subsection (b)(9)(C) requires that degassing by forced ventilation and the use of vacuum trucks is limited to a single tank or vessel at a time. This is necessary to ensure protectiveness of the proposed PBR. Under this proposed PBR, BMPs for a degassing event include completely emptying all the liquids from the tank before degassing begins. In accordance with the proposed subsection (b)(9)(A), liquids and solids that are removed from the tank or vessel are required to be directed to covered containment equipment and properly disposed of or recycled. BMPs should be used to remove air contaminants from tanks or vessels.

Floating roof tanks must be landed prior to beginning the degassing process. In accordance with proposed subsections (b)(9)(B) and (C), BMP for degassing large floating roof tanks (approximately 100,000 bbl) includes either routing the emissions to a control device or directing the emissions out the top of the tank. Allowing degassing at ground level without control can create explosive conditions and expose workers to emissions that exceed standards regulated by OSHA. Controlling or routing emissions out the top of the tank is consistent with documented industry practice regarding tank degassing and cleaning. In some cases industry may opt to control emissions from the degassing or purging of tanks or vessels. For example, degassing emissions may be sent to a control device like a thermal oxidizer. Proposed subsection (b)(9)(D) authorizes temporary emissions capture equipment and control facilities associated with degassing tanks or vessels.

Planned operational landings of floating roof tanks or operational emptying of fixed roof tanks are authorized under this proposed PBR as shutdown activities. The refilling of these tanks is considered a startup activity. Air emissions from floating roof tanks are greater while the tank roof is landed and remain so until the tank is refilled and the roof is again floating. For operational landings, it is BMP that tanks should be filled and back in normal operation as safely and quickly as possible. However, the commission clarifies that "convenience landings" are not considered operational landings and are specifically excluded from authorization in subsection (b)(9)(E). The proposed PBR will not authorize emissions from convenience landings consistent with the memorandum on "Air Emissions During Tank Floating Roof Landings" dated December 5, 2006. The memorandum is available on the TCEQ Web site at *http://www.tceq.state.tx.us/assets/public/permitting/air/memos/tank_landing_final.pdf*.

To demonstrate compliance with proposed subsection (d), records should be kept of the date, time, and the equipment used for degassing as well as the date and time of any operational landing or operational fixed roof tank emptying. For degassing, OGSs will have to keep records that demonstrate that all liquids have been removed from the vessel and the date a degassing event takes place. For operational landing or operational fixed roof tank emptying, OGSs will have to keep records that demonstrate the level to which the liquids were removed from the vessel and the time required to

refill the tank to normal operating levels. Also, because degassing and purging of vessels may also be a result of upsets or unplanned maintenance at the site, or from upstream or downstream upsets or unplanned maintenance, records should reflect the planned cause or reason for the degassing or purging. Because degassing and blowdowns were identified as the source of the highest emissions related to planned MSS activities, permit holders may need to quantify emissions from these planned MSS activities to be able to demonstrate compliance with the general limits for claiming this proposed PBR and the OGS construction authorization claimed.

Proposed subsection (b)(10) authorizes the facilities used for abrasive blasting, surface preparation, and surface coating at OGSs. Historically, the commission has authorized these maintenance activities under §106.263, if the blasting, surface preparation, and coating supplies and equipment are taken to the object fixed in place and there is no practical means of moving the object to a designated area for surface preparation. If an object can be taken to a designated area, then other PBRs such as §106.433, Surface Coat Facility, and §106.452, Dry Abrasive Cleaning, would apply.

The preamble to §106.263 (October 26, 2001, issue of the *Texas Register* (26 TexReg 8523)) states that the emissions from blasting and coating fixed objects have a record of insignificant emissions. This same determination is applied in this proposed PBR to include the surface preparation and coating of equipment that is used at the site for oil and gas handling or production. This allows flexibility for oil and gas operators to

perform necessary maintenance on equipment and supporting structures used at a location. Limiting surface preparation and coating to equipment used at the site is intended to prevent the site from being used inappropriately as a surface coating facility, which would require construction authorization. For example, a permit holder cannot bring equipment to the site that is not part of the oil and gas handling and production activities at the site. Surface preparation and coating of non-process equipment should have separate authorization such as §106.433, §106.452, or a case-by-case permit. Records documenting surface preparation and coating activities must be kept to demonstrate compliance under proposed subsection (d), and as part of the maintenance program in accordance with proposed subsection (c)(2).

Proposed new §106.359(c) establishes the conditions to keep facilities in good working order, and develop and implement a maintenance program that is based on BMPs.

Proposed subsection (c)(1) specifically requires facilities that have the PTE air contaminants be maintained in good working order and operated properly. This includes keeping appropriate hatches closed when not being used; following the permit holder's maintenance program (which may include manufacturer's recommendations) for operation, maintenance, and corrosion prevention of equipment and structures; and keeping piping intact from normal wear and tear to prevent upset conditions. The lack of planned maintenance or failure to conduct planned maintenance that results in emissions may be deemed noncompliance with this PBR. For example, tanks or piping

with holes resulting from the lack of corrosion prevention are not facilities in good working order.

Proposed subsection (c)(2) requires the permit holder develop and implement a maintenance program. The purpose of the maintenance program is to keep track of planned and performed maintenance, to maintain consistency of implementation among different personnel, and to demonstrate compliance with the proposed PBR. The commission anticipates that several parts of the maintenance program are already a part of the normal operation of many OGSs. Proposed subsection (c)(2)(A) - (E) lists the basic requirements for a maintenance program. Specifically, the maintenance program should address the cleaning and routine inspection of all equipment, repair of equipment on schedules to prevent failure and maintain performance, training for appropriate personnel, and records of conducted planned MSS activities.

Training of personnel may be accomplished in a number of ways. The training is not intended to create a requirement for certification or expensive formal training, but is intended to ensure that personnel who are responsible for implementing the maintenance program have the knowledge necessary to do so. The commission anticipates that on-the-job training will be conducted to familiarize personnel with the requirements of the maintenance program and the actions necessary to implement the program.

The maintenance program may be written or electronic, but must be made available to agency personnel upon request. Each individual piece of equipment must have a corresponding record. Records kept demonstrating compliance with other applicable rules (such as federal rules or the general requirements to claim a PBR) may fulfill some of the requirements for the maintenance program. The maintenance program should demonstrate planned MSS activities for each piece of equipment, and include the corresponding records of planned MSS that was conducted. This is necessary to demonstrate that the plan has been implemented and is being followed at the OGS.

Proposed subsection (d) references the general PBR recordkeeping requirements in §106.8 for compliance. These recordkeeping requirements are intended to provide a clear, understandable set of expectations in order to easily demonstrate compliance. Providing explicit requirements aids practical enforceability, which is an essential element for all commission authorizations. All necessary records must be maintained and contain sufficient information to demonstrate compliance. These records are important to: verify all information used to estimate emissions; verify that planned MSS emissions meet all applicable limits; demonstrate current equipment and processes; explain equipment or process changes and associated effects on emissions; and demonstrate that equipment is properly operated, monitored, maintained, and inspected. Any records that are kept for other purposes but demonstrate the necessary information are sufficient to demonstrate compliance with this proposed PBR.

Records may be written or electronic and should be kept as part of the maintenance program. Examples of records that may demonstrate compliance include: personnel training logs, information used to estimate emissions, inspection logs, maintenance activity logs or receipts, or copies of the maintenance program. Examples of records for specific activities include: the date and time of each pigging occurrence with corresponding pipeline contents, diameter, length, and pressure; records for blowdowns kept by the date, time, planned cause or reason, and the equipment; degassing activity date, time, planned cause or reason, and the equipment used; and blasting and coating of equipment used at the site in oil and gas handling and production. Correspondence and documentation (i.e., notice) of planned MSS activities that occur as a result of third party actions must be maintained and made available.

Claiming the PBR and maintaining the required recordkeeping will fulfill the requirement to "file an application" to authorize planned MSS emissions as required in THSC, §382.051962. Records must be readily available to the commission or local air pollution control program with jurisdiction upon request.

Fiscal Note: Costs to State and Local Government

Nina Chamness, Analyst, Strategic Planning and Assessment, has determined that, for the first five-year period the proposed rule is in effect, no significant fiscal implications are anticipated for the agency as a result of administration or enforcement of the proposed rule. The proposed rule will apply to certain oil and gas facilities and are not

expected to have any significant fiscal implications for other units of state or local government.

The proposed rule will amend Chapter 106 and apply to oil and gas operations in all counties in the state, with the exception of facilities authorized under §106.352(a) - (k) and specific planned MSS activities or facilities that have already been authorized under a §116.111 (General Application) permit. The proposed rule will be protective of the environment and establish an enforceable authorization methodology for planned MSS emissions at affected oil and gas facilities that comply with the emission limits for PBRs found in Chapter 106. Owners and operators of affected oil and gas facilities have until January 5, 2014, to authorize planned MSS emissions. After that date, owners and operators of OGSs with unauthorized MSS emissions will lose the ability to claim an affirmative defense.

Specifically, the proposed rule will: establish a new, voluntary PBR to authorize planned MSS emissions at affected OGSs; require the use of a maintenance program at these sites based on BMPs to minimize emissions from planned MSS activities; and require owners and operators to keep records to demonstrate compliance with required maintenance.

The proposed rule is not expected to have significant fiscal impacts for other units of state or local government. Oil and gas facilities are not typically owned or operated by

these types of governmental entities. If there are governmental entities that own or operate affected oil and gas facilities and sites, they would be required to establish a maintenance program and keep records to demonstrate compliance, but cost implications are expected to be minimal.

The proposed rule will streamline the authorization process of planned MSS emissions at applicable OGSs and are not expected to significantly increase revenue or agency costs. The proposed authorization process will cost less than requiring oil and gas companies at affected sites to apply for case-by-case permit amendments or standard permits to authorize planned MSS emissions.

Public Benefits and Costs

Nina Chamness also determined that for each year of the first five years the proposed new rule is in effect, the public benefit anticipated from the changes seen in the proposed rule will be continued protection of the environment and public health and safety by establishing enforceable authorizations to minimize planned MSS emissions at certain oil and gas facilities and sites. Owners and operators of these facilities and sites will be required to develop a maintenance program and keep records to demonstrate compliance with that maintenance program.

The proposed rule will not have a significant fiscal impact on individuals or businesses. Comptroller records indicate that there may be as many as 2,784 companies that own or

operate OGSs in Texas. Staff estimates that there are over 500,000 OGSs that may be able to claim the proposed PBR to authorize planned MSS emissions. The proposed rule makes registering for a PBR to authorize planned MSS emissions from oil and gas facilities voluntary, and individuals or companies are choosing to pay the PBR fee of $100 for a small company or $450 for a large company when they voluntarily register. It is not known how many businesses will choose to pay for the PBR, but the number is expected to be low. The proposed, enforceable authorization method will be less costly than obtaining a case-by-case permit or a standard permit to authorize planned MSS emissions and will continue to allow oil and gas facilities to qualify for an affirmative defense after January 5, 2014.

The proposed rule does require individuals or businesses owning or operating oil and gas facilities to keep records of maintenance performed on equipment to demonstrate compliance, but the cost of recordkeeping is expected to be minimal. Records can be kept manually or electronically. The BMPs required by the proposed rule are not expected to increase maintenance costs since they are flexible and consistent with the regular maintenance a prudent equipment owner would perform to minimize those costs and maintain equipment in good working order.

Small Business and Micro-Business Assessment

No adverse fiscal implications are anticipated for small or micro-businesses that own or operate oil and gas facilities in Texas. Staff estimates that there may be as many as

135,000 OGSs that are owned or operated by small businesses. Small businesses are choosing to pay the $100 fee to obtain the PBR by voluntarily registering. Small businesses will be required to develop a maintenance program based on BMPs and keep records to demonstrate compliance, but costs associated with these requirements are expected to be minimal.

Small Business Regulatory Flexibility Analysis

The commission has reviewed this proposed rulemaking and determined that a small business regulatory flexibility analysis is not required because the proposed rule is required to protect the environment and does not adversely affect a small or micro-business in a material way for the first five years that the proposed rule is in effect.

Local Employment Impact Statement

The commission has reviewed this proposed rulemaking and determined that a local employment impact statement is not required because the proposed rule does not adversely affect a local economy in a material way for the first five years that the proposed rule is in effect.

Draft Regulatory Impact Analysis Determination

The commission reviewed the proposed rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225 and determined that the proposed 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." While the purpose of this rulemaking is to authorize emissions from planned MSS activities at oil and gas handling and production facilities, 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 proposed rulemaking does not constitute a major environmental rule, even if it did, a regulatory impact analysis will not be required because the proposed 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 proposed rule does not meet any of the four applicability criteria listed in Texas Government Code, §2001.0225 because: 1) the

proposed 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 proposed rulemaking; and 4) the proposed 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, THSC, §382.051962 applies to this rulemaking. THSC, §382.051962 states that the commission may adopt one or more PBR or one or more standard permits and may amend one or more existing PBR or standard permits to authorize planned MSS activities for facilities described by THSC, §382.051961(a). THSC, §382.051962 also 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. Additionally, the intent of the rule is to authorize emissions from planned MSS activities at oil and gas handling and production facilities. The executive director examined monitoring and modeling data associated with planned MSS activities at oil and gas handling and production facilities and sites as discussed in Background and Summary of the Factual Basis for the Proposed Rule. Therefore, the rule is proposed in accordance with THSC, §382.051962.

The commission invites public comment regarding the draft regulatory impact analysis determination during the public comment period. Written comments on the draft regulatory impact analysis determination may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Takings Impact Assessment

The commission evaluated the proposed rulemaking and performed an analysis of whether the proposed 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 proposed rulemaking would be neither a statutory nor a constitutional taking of private real property. The primary purpose of the rulemaking is to authorize emissions from planned MSS activities at oil and gas handling and production facilities. The proposed 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, this proposed rule would 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 proposed rulemaking action is to protect, preserve, and enhance the diversity, quality, quantity, functions, and values of coastal natural resource areas (31 TAC §501.12(l), Goals). The proposed rulemaking will not increase emissions of air pollutants and is therefore consistent with the CMP goal in 31 TAC §501.12(1) and the CMP policy in 31 TAC §501.32.

Promulgation and enforcement of these rules will not violate or exceed any standards identified in the applicable CMP goals and policies because the proposed rules are consistent with these CMP goals and policies and because these rules do not create or have a direct or significant adverse effect on any coastal natural resource areas. Therefore, in accordance with 31 TAC §505.22(e), the commission affirms that this rulemaking action is consistent with CMP goals and policies.

Written comments on the consistency of this rulemaking may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Effect on Sites Subject to the Federal Operating Permits Program

The new PBR in this proposal is a potentially applicable requirement under 30 TAC Chapter 122, Federal Operating Permits Program. Upon the effective date of this rulemaking, permit holders subject to the Federal Operating Permit Program that choose to claim this PBR to authorize planned MSS activities at their sites will be subject to the requirements of this section. Currently, an OGS may be authorized by PBR, standard permit, permits, or a combination of these authorizations. This proposed PBR is being developed to provide an updated, comprehensive and protective authorization for common planned MSS at OGSs in Texas. New and existing OGSs may be subject to the Title V federal operating permit program and if so, must obtain a site operating permit (SOP) or a general operating permit (GOP) that codifies all applicable requirements. Based on recent regulatory changes required by EPA and 40 CFR Part 70, a GOP can only be used by sites authorized under PBR or standard permit. If a major site subject to Title V does not qualify for a PBR or standard permit, it must obtain an SOP.

Announcement of Hearing

The commission will hold a public hearing on this proposal in Austin on April 4, 2013, at 2:00 p.m. in Building E, Room 201S, at the commission's central office located at 12100 Park 35 Circle. The hearing is structured for the receipt of oral or written comments by interested persons. Individuals may present oral statements when called upon in order of registration. Open discussion will not be permitted during the hearing; however,

commission staff members will be available to discuss the proposal 30 minutes prior to the hearing.

Persons who have special communication or other accommodation needs who are planning to attend the hearing should contact Sandy Wong, Office of Legal Services at (512) 239-1802. Requests should be made as far in advance as possible.

Submittal of Comments

The commission is also specifically requesting comments on any other processes that should be considered planned MSS activities with the same character and quantity of emissions as the lower emitting activities listed in this proposed rule. Although the commission cannot materially alter the scope of the proposed rule, the proposed language is intended to account for different processes or maintenance activities with equivalent character and quantity of emissions that may be identified during the comment period. Additional planned MSS activities identified during the stakeholder process that are within the category of the lower emission activities may be added to the rule if appropriate.

Written comments may be submitted to Bruce McAnally, MC 205, Office of Legal Services, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087, or faxed to (512) 239-4808. Electronic comments may be submitted at: *http://www5.tceq.texas.gov/rules/ecomments/*. File size restrictions may apply to

comments being submitted via the eComments system. All comments should reference Rule Project Number 2012-030-106-AI. The comment period closes April 15, 2013. Copies of the proposed rulemaking can be obtained from the TCEQ Web site at *http://www.tceq.texas.gov/nav/rules/propose_adopt.html*. For further information, please contact Tasha Burns, Air Permits Division, Technical Support Section at (512) 239-5868.

SUBCHAPTER O: OIL AND GAS

§106.359

Statutory Authority

The new rule is proposed 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 PBR is also proposed 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; §382.051961, which establishes specific requirements and analyses that must be conducted before the commission may adopt a new, or amend an existing permit by rule or standard permit for oil and gas facilities; §382.051962, which extended the deadline for owners or operators of oil and gas facilities to submit an

application to authorize maintenance, startup, and shutdown emissions to January 5, 2014; and §382.057, concerning Exemption, which authorizes exemptions from permitting.

The proposed new rule implements THSC, §§382.002, 382.011, 382.012, 382.017, 382.051, 382.05196, 385.051961, 382.051962, and 382.057.

§106.359. Planned Maintenance, Startup, and Shutdown (MSS) at Oil and Gas Handling and Production Facilities.

(a) Applicability. This section applies to certain authorized oil and gas handling or production facilities or sites, and authorizes emissions from planned maintenance, startup, and shutdown (MSS) facilities and activities if all of the applicable requirements of this section are met.

(1) This section does not apply to oil and gas handling or production facilities or sites authorized under §106.352(a) - (k) of this title (relating to Oil and Gas Handling and Production Facilities), the non-rule Air Quality Standard Permit for Oil and Gas Handling and Production Facilities, §106.355 of this title (relating to Pipeline Metering, Purging, and Maintenance), or Subchapter U of this chapter (relating to Tanks, Storage, and Loading.)

(2) This section may not be used to supersede an existing authorization under Chapter 106 of this title (relating to Permits by Rule) or §116.620 of this title (relating to Installation and/or Modification of Oil and Gas Facilities) for planned MSS unless the previously represented emission control methods, techniques, and devices continue to be used and there is no resulting increase in emissions.

(3) All emissions covered by this section are limited to, collectively and cumulatively, emissions that are less than or equal to any applicable emission limit under §106.4(a)(1) - (3) of this title (relating to Requirements for Permitting by Rule) in any rolling 12-month period.

(b) Activities. Planned MSS activities and facilities authorized by this section include the following:

(1) engine and turbine maintenance;

(2) repair, adjustment, calibration, lubrication, and cleaning of oil and gas site process equipment;

(3) replacement of piping components, pneumatic controllers, boiler refractories, wet and dry seals, meters, instruments, analyzers, screens, and filters;

(4) turbine or engine hot section swaps;

(5) piping used to bypass a facility during maintenance;

(6) planned MSS activities with the same character and quantity of emissions as those listed in paragraphs (1) - (5) of this subsection;

(7) pigging and purging of piping;

(8) blowdowns;

(9) emptying, purging, degassing, or refilling of tanks and vessels (except as excluded in subparagraph (E) of this paragraph), and any associated temporary emission capture and control facilities if the following requirements are met:

(A) all contents from process equipment or storage vessels must be removed to the maximum extent practicable prior to opening equipment to commence degassing and maintenance. Liquid and solid removal must be directed to covered containment, recycled or disposed of properly. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained;

(B) facilities must be degassed using best management practices to ensure air contaminants are removed from the system to the extent allowed by process equipment or storage vessel design. Emissions must be directed out the top of floating roof tanks;

(C) tanks and vessels degassed by forced ventilation are limited to degassing a single tank or vessel at a time;

(D) in lieu of the requirements in subparagraphs (A) and (B), or (C) of this paragraph, facilities may route emissions through a closed system to a control device; and

(E) emptying tanks for convenience purposes is not authorized; and

(10) facilities used for abrasive blasting, surface preparation, and surface coating on equipment and structures used at the site in oil and gas handling or production.

(c) Best Management Practices.

(1) All facilities with the potential to emit air contaminants must be maintained in good working order and operated properly.

(2) Each permit holder shall establish, implement, and update, as appropriate, a program to maintain and repair facilities as required by paragraph (1) of this subsection. The minimum requirements of this program must include:

(A) a maintenance program developed by the permit holder for all equipment that is consistent with good air pollution control practices, or alternatively, manufacturer's specifications and recommended programs applicable to equipment performance and the effect on emissions;

(B) cleaning and routine inspection of all equipment;

(C) repair of equipment on timeframes that minimize equipment failures and maintain performance;

(D) training of personnel who implement the maintenance program; and

(E) records of conducted planned MSS activities.

(d) Recordkeeping. Records to demonstrate compliance with this section must be kept in accordance with §106.8(c) of this title (relating to Recordkeeping).