

Air Permit Reviewer Reference Guide

APDG 6052

Preliminary Determination Summary

**Air Permits Division
Texas Commission on Environmental Quality
November 2011**

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Preliminary Determination Summary

Introduction

The Texas Commission on Environmental Quality (TCEQ) regulates air quality in the state of Texas through the Texas Clean Air Act (TCAA), located in Chapter 382 of the Texas Health and Safety Code; develops rules, including those in Title 30 Texas Administrative Code (TAC) Chapter 116; and implements provisions of the Federal Clean Air Act (FCAA).

Title I of the FCAA requires states to develop State Implementation Plans (SIPs) to address attainment and maintenance of National Ambient Air Quality Standards (the NAAQS). Title I requires a preconstruction permitting program for both major and minor sources (New Source Review or NSR).

The TCEQ staff conducts a preconstruction technical review during the air permitting process. This review ensures that the operation of a proposed facility will comply with all applicable rules and regulations (federal, state, and TCEQ) and intent of the TCAA, and not cause or contribute to a condition of air pollution. A review of an air permit application involves an assessment of Best Available Control Technology (BACT) and human health and welfare effects related to emissions resulting from the normal operations of facilities, including emissions from planned maintenance, startup, and shutdown (MSS) activities, as applicable. For Nonattainment New Source Reviews (NNSR), Lowest Achievable Emission Rate (LAER) control technology needs to be addressed. Likewise, for a Hazardous Air Pollutant (HAP) review, Maximum Achievable Control Technology (MACT) needs to be addressed.

In addition to the technical review process, the Texas NSR program has enhanced the public participation process above minimum federal requirements and gives the public the opportunity to comment on authorizations. Notice is provided via newspaper publication and signposting, both of which are also in alternate languages when certain criteria are met. For permits that require federal review, a second public notice is required. In this notice, the permit reviewer must make a preliminary determination whether construction should be approved and notify the public. The permit reviewer's recommendation is based on information provided by the applicant, as it is the applicant's burden to demonstrate that the permit should be issued.

During the course of the review, the permit reviewer prepares the Preliminary Determination Summary (PDS). This document outlines the Air Permits Division (APD) process to develop a PDS and provides general guidance on responsibilities, format, content, and quality assurance.

While this document defines minimum requirements for staff consideration, it is not regulatory and does not limit the permit reviewer's ability to include any data to address issues such as, comments received during the public notice or meeting process, coordination with U.S. Environmental Protection Agency (EPA) or APD management on known areas of interest, or to require additional information from the applicant.

Summary of Significant Changes

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Section IV. Emissions. Added reference to condensable PM₁₀/PM_{2.5} emissions.

Section V. Federal Applicability. Deleted the additional example that referred to the four counties that are designated as serious nonattainment for 1-hour ozone in the Dallas/Fort Worth (DFW) area. The entire DFW area is now 8-hour serious nonattainment for ozone, and the major source applicability requirements for the entire nonattainment area is consistent with the 1-hour requirements.

Section VII. Air Quality Analysis. Revised introductory paragraphs to clarify the purpose and scope of the Air Quality Analysis. Added a reference to the air quality analysis audit. This document was developed to meet the public notice requirement of 30 TAC Chapter 39, Subchapter H. Also clarified that for nonattainment review, an air quality analysis is not required for the nonattainment pollutant since the area is not attaining a NAAQS.

Section VII. D. Increment Analysis. EPA has promulgated increments for PM_{2.5}. Added PM_{2.5} to pollutants with increment and removed reference to PM₁₀ as a surrogate for PM_{2.5}.

Appendix A. Section IV. Emissions. Added reference to condensable PM₁₀/PM_{2.5} emissions.

Appendix A. Section V. Federal Applicability. Modified the note after the table to reflect the change to the 8-hour ozone classifications for the DFW area. The 1-hour and 8-hour classifications are the same (that is, serious).

Appendix A. Section VII. Air Quality Analysis. Changed to emphasize the requirement to ensure all relevant parts of the air quality analysis are evaluated.

Appendix A. Section VII. A and D. De Minimis Analysis and Increment Analysis. EPA has promulgated increments for PM_{2.5}. Added PM_{2.5} to pollutants with increment and removed reference to PM₁₀ as a surrogate for PM_{2.5}.

Purpose

The PDS is required by TCEQ and EPA rules to provide information to the public as submitted by the applicant to explain the executive director's recommendation on the issuance or approval of the federal permit: Prevention of Significant Deterioration (PSD), Nonattainment New Source Review (NNSR), Maximum Achievable Control Technology (MACT) emission limitations and controls for Hazardous Air Pollutants (HAP), and Plant-Wide Applicability Limit (PAL).

A consistent PDS approach is desired that will explain our perspective on the general and specific requirements to obtain these federal permits. Some of the requirements can be found in Title 40 Code of Federal Regulations (CFR) sections 51.161, 51.165, 51.166, 63.5; Title 30 Texas Administrative Code (TAC) sections 39.419, 116.132, 116.150, 116.151, and 116.194.

Format and Content

There is a general format for PDS that can be modified to address each type of permit. The permit reviewer is responsible for the content of the PDS, including the air quality analysis and impacts assessment. The PDS is a summary of key elements required during the technical review and the information needed for the PDS must be gathered during the technical review process. Per APD and EPA practice and procedure, the PDS should clearly state for the “public” why the permit should be issued. This task cannot be met solely by referencing other documents and must be accomplished by summarizing key elements of the technical review process. The permit reviewer must address items that are required, such as control technology (BACT, LAER, MACT, etc.), the effect on air quality, and known issues identified either through comments received from the public and EPA or by management direction.

While each PDS is unique, the permit reviewer must adhere to the general format to ensure consistency and to assist with peer and management review. The permit reviewer will profile and submit the PDS with the proposed Special Conditions, proposed maximum allowable emission rates table (MAERT), transmittal letter, and public notice information. The permit reviewer may request the assistance of a document processor to ensure consistency of format and general readability but the permit reviewer is responsible for the final product.

The following guidance contains the minimum information needed to complete the PDS. Each PDS will be saved in GroupWise. When saved into the GroupWise system, save the document with an identifier within the database, so that it is possible to locate PDS documents. For example, “PDS - Company Name - Permit Number,” where the Permit number can be either the State Permit Number, PSD Permit Number, or both.

- **Format**

The PDS format consists of the following sections (*as applicable depending on review type*):

- Headers (All): centered header with document type (Preliminary Determination Summary); company name and state and federal permits numbers as applicable (Permit xxxxxx; PSD-TX-xxxx; Nxxx; HAPxx; PALxx). Headers for subsequent pages of the PDS will contain the document type, the permit number, and the page number.
- Applicant Information (All): company name, applicant mailing address, customer number (CNxxxxxxxxxx).
- Project Location (All): nearest city, county, entrance address and ZIP Code if available or direction to location, regulated entity number (RNxxxxxxxxxx).
- Project Description (All): major industry group and specific processes proposed or modified, basic description of new or modified facilities and the modifications.
- Emissions (All): total proposed emissions in tons per year (tpy), except for HAP (both pounds per hour and tpy).

- Federal Applicability (PSD, NNSR, HAP, PAL).
- Control Technology Review (PSD, NNSR, HAP).
- PSD: federal applicability; control technology review; air quality analysis; de minimis analysis; air quality monitoring; NAAQS analysis; increment analysis; additional impacts analysis; minor source NSR and air toxics review.
- NNSR: federal applicability; control technology review; offsets; alternate site analysis and compliance certification; minor source NSR and air toxics review.
- HAP: federal applicability - 112(g); control technology review; and air toxics review. The 112(g) review (also known as a “case-by-case MACT” review) applies to new/reconstructed major sources of HAPs for which a MACT standard has either not been promulgated, or for which an existing MACT standard was vacated by the court. A major source of HAPs is defined as an emission rate which is greater than or equal to 10 tpy of any individual HAP, or greater than or equal to 25 tpy of combined HAPs.
- PAL: the applicant must choose a two-year baseline period that represents the highest rolling 24-month period during the previous ten years (five years for electric utilities) for each pollutant covered by a PAL.

- **Content**

The minimum information for each section of the PDS format follows. All applicable sections of the format must be included. For multiple authorizations, the permit reviewer should indicate how each section applies for the authorization.

I. Applicant (Company Name, P. O. Box (or address), County - State - ZIP Code)

II. Project Location (Nearest city, County, ZIP Code)

III. Project Description

Identify the type or types of federal permit(s) applied for, and note the basic triggering premises for the action.

NNSR and PSD would note the specific criteria pollutant emissions that equaled or exceeded the federal threshold (stating the threshold specifically) that triggered the need for a new or modified permit.

HAP would identify the specific HAPs that equaled or exceeded the major threshold, and a federal review was required because either no 40 CFR Part 63

MACT was developed for the source, or that an existing 40 CFR Part 63 MACT was vacated by the court.

PAL would identify the desire to clarify federal applicability triggers, noting the baseline actual emission rates for each of the specific criteria pollutants for which a PAL is being established.

Identify the major industry group and each specific process proposed or modified. Provide a basic description of the new facilities with a list of all unit operations that are originating sources of emissions to the atmosphere, raw material inputs, intermediates, and outputs. For modified facilities provide the basic description of the facility as noted for new facilities and then explain the modifications proposed. For each facility explain how the planned maintenance, startup, and shutdown (MSS) activities and emissions are included. This section should paint a picture of what the permit is for and what processes and activities are included for the public.

IV. Emissions (for each applicable type of review)

The proposed total emissions from the site of each of the following pollutants: volatile organic compounds (VOC), nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter (PM, PM₁₀, PM_{2.5}), sulfuric acid mist (H₂SO₄), lead (Pb) and fluorides in tons per year (tpy) must be presented. Provide the total change in allowable emissions from the previous permit if one is being amended. Also, provide a comparison of the baseline actual emission rate to the planned emission rate (either potential to emit (PTE) or projected actual) for the facilities associated with the project under review. To be clear, address all of these pollutants even if there are no emissions or no changes to the emissions. Where permit by rules and standard permits are being incorporated clarify briefly how these changes are part of the totals presented.

When conducting an ozone analysis, describe the precursors for which the analysis was initiated, NO_x and/or VOC.

When conducting an analysis for PM_{2.5}, describe the associated precursors, NO_x and/or SO₂. Also, when conducting an analysis for PM₁₀/PM_{2.5}, describe/explain that condensable PM₁₀/PM_{2.5} emissions (back half catch) were included in the review along with the filterable PM₁₀/PM_{2.5} emissions (front half catch).

Explain how planned MSS is addressed in the permit. Specifically clarify if the MSS emissions are treated as separate emission points on the MAERT, or if they are contained in an MSS cap. Also, provide a description if there are startup and shutdown emissions which are contained as a part of the current normal emission authorization and are not specifically identified or otherwise distinguished.

If a 112(g) analysis was required, provide a description of any HAPs identified in the permit that were evaluated. Provide the allowable total emissions, in tpy, for all applicable HAP at the site that could equal or exceed the combined HAP emission

rate of 25 tpy, and for each individual HAP that could equal or exceed an individual HAP emission rate of 10 tpy.

V. Federal Applicability

Explain the federal attainment status for the source location. Specifically state whether or not the location is nonattainment for any pollutant, and if so, provide the classification (severity) for each nonattainment pollutant for the area (marginal, moderate, serious, and severe). Provide the emission threshold for a major source for each designated nonattainment pollutant. For example, Galveston County is a severe nonattainment area for ozone.

You would indicate that the nonattainment major source definition is 25 tpy of either NO_x or VOC. Then explain that the location is in attainment or unclassified for each of the other criteria pollutants, ozone, nitrogen dioxide (NO₂), SO₂, CO, PM₁₀ and PM_{2.5}, and Pb that were not nonattainment for the site location.

Likewise, you would then explain that the location is in attainment or unclassified for each of the other criteria pollutants, ozone, NO₂, SO₂, CO, PM₁₀ and PM_{2.5}, and Pb that were not nonattainment for the site location.

For PSD purposes, identify the source type being permitted and specifically state whether the source is a named or unnamed source, and explain how this defines the emission threshold for a major source for attainment or unclassified pollutants as either 100 or 250 tpy.

Then state the current and proposed major source status of the site for nonattainment and for PSD.

For NNSR. For each nonattainment pollutant, explain whether netting was triggered. First, determine if a project results in an emission increase by comparing the baseline actual emission rates to either the potential to emit (PTE) or the projected actual emission for each facility in the project undergoing evaluation. At this point in the review process, we are evaluating project increases only (do not include decreases at this time). If the baseline actual to PTE or projected actual results in an emission increase which equals or exceeds the netting significance level of 5 tpy, netting is triggered. If netting is triggered, you can use baseline actual-to-either PTE or projected actual (projected actual can only be used for existing facilities, new facilities must use the PTE) for the current project, but all other projects within the contemporaneous window are estimated on a baseline actual-to-PTE basis.

If netting was not triggered, explain why (that there were either no new emissions, or increases of existing actual emissions, that either equaled and/or exceeded the significance level for the pollutant undergoing review).

Include the specific significance level (major modification threshold) for the pollutant under evaluation, or state that the evaluation is using the 5 tpy trigger if the project is located in a Serious or Severe Areas per 116.150(c)(1). For each nonattainment pollutant where netting was triggered, describe the contemporaneous netting exercise conducted, noting the years or basis for the current actual emissions and the actual net change determined. State specifically if they netted out and include a brief explanation of the nature of any reductions used. Specifically state whether or not a federal permit action was triggered. Remember this must be done for each nonattainment pollutant.

For PSD. For each attainment or unclassified pollutant, explain whether netting was triggered. First, determine if a project results an emission increase by comparing the baseline actual emission rates to either the potential to emit (PTE) or the projected actual (projected actual can only be used for existing facilities, new facilities must use the PTE) emission for each facility in the project undergoing evaluation. At this point in the review process, we are evaluating project increases only (do not include decreases at this time). If the baseline actual to PTE or projected actual results in an emission increase which equals or exceeds the significance level, netting is triggered. If netting is triggered, you can use baseline actual-to-either PTE or projected actual (projected actual can only be used for existing facilities, new facilities must use the PTE) for the current project, but all other projects within the contemporaneous window are estimated on a baseline actual-to-PTE basis.

If netting was not triggered, explain why (that either no new emissions or increases of existing actual emissions, that either equaled and/or exceeded the significance level for the pollutant undergoing review).

Include the specific significance level (major modification threshold) for the pollutant under evaluation. For each pollutant where netting was triggered, describe the contemporaneous netting exercise conducted, noting the years or basis for the current actual emissions and the actual net change determined. State specifically if they netted out and include a brief explanation of the nature of any reductions used. Specifically state whether or not a federal permit action was triggered. Remember, this must be done for each attainment or unclassified pollutant, including NO₂ even when NO_x is addressed for nonattainment purposes.

Note: In either situation, NNSR and/or PSD, if there are perceived emission increases represented at a source's permit due to either PBR or standard permit incorporation, that aspect needs to be explained.

Use a table for the primary regulated pollutants (other pollutants may be added if/when required for municipal solid waste, etc.) Include the pollutant; project increase; netting trigger; if netting is required; net emission change; major modification trigger; and if PSD/Nonattainment is triggered. An example table can be found in the PDS checklist.

For HAP. This authorization is required for new sources of HAP or reconstructed sources of HAP and there is no MACT standard. A source is major for HAP when the emission rates equal or exceed 10 tpy for an individual HAP and/or 25 tpy for collective HAP. Describe the applicable HAP, emissions, and the reason why there is a need to perform a case-by-case MACT determination. If none of the HAP is major after the applicability review, document the state review in sections VI and VII.

For PAL. The applicant must choose a two-year baseline period that represents the highest rolling 24-month period during the previous ten years (five years for electric utilities) for each pollutant covered by the PAL. The permit reviewer lists the period, emissions in tpy, and describes PAL limits for each pollutant.

VI. Control Technology Review

For PSD, NNSR, and HAP. Describe the control technologies proposed for the project. Identify the particular pollutants that trigger the review, and discuss applicable controls for each applicable pollutant.

PSD: BACT review

NNSR: LAER control technology for NNSR review (or BACT in limited cases, as allowed by the EPA's Federal New Source Review (FNSR) rules)

HAP: MACT for HAP review for 112(g)

BACT, MACT, and LAER should be settled before the air quality analysis is started. If impacts are not acceptable, additional control or reduced allowable emission rates may be needed.

The permit applicant should make their best case for why a certain technology represents BACT/LAER/MACT. If surrogate pollutants were used to demonstrate control for other pollutants, the applicant must describe how the surrogate's control is representative for the other pollutant. For PSD and NNSR, the permit reviewer documents the steps that the company made to evaluate the proposed project against technologies contained within the RACT/BACT/LAER Clearinghouse (RBLC) and permits recently issued/approved in Texas and other states, etc. If a certain technology was ruled out because of technical practicability or economics (in the case of PSD), describe that as well. For MACT, the applicant must show that the proposed emission limitation is not less stringent than the emission limitation achieved in practice (the facility is in operation) by the best controlled similar facility. Cost, energy requirements and non-air quality health and environmental impacts may be used to determine what is achievable for the applicant.

When MSS activities and their emissions are authorized, discuss the applicable control technology analysis conducted specific to the MSS activities and their

emissions. The description should take the same basic approach as above for the “normal/production” emissions. If BACT is different for “MSS modes” of operation vs. “normal/production modes” of operation, describe the differences (explain the control level differences, why MSS control is different from “normal/production” control, and how air quality standards will not be adversely affected).

If a Flexible Permit is involved, it may be necessary to remove certain facilities from the emissions caps and give them their own individual emission limit, or specific sub cap, to ensure that federal review is not triggered. Describe any individual emission limits, or specific sub caps, placed into the flexible permit to provide for a federally enforceable emission rate, or make an actual emission reduction federally enforceable.

VII. Air Quality Analysis

This is the part of the permit review where the applicant demonstrates that the proposed project will protect public health and welfare. The type of air quality analysis depends on the type of review being conducted, and the analysis can range from conducting full dispersion modeling to a qualitative type analysis. For example, if a project is a new major source or a major modification of an existing major source in an attainment area (which means that PSD is triggered), the pollutants for which the project is major will be evaluated through a multi-tiered air quality analysis review. The project increases will be compared to a de minimis level. If the project is not de minimis, additional review, that may require refined air dispersion modeling, will be necessary.

If the project is de minimis, or the project is located at a minor source, the applicant still must demonstrate that the National Ambient Air Quality Standards (NAAQS) are protected. This analysis should include the 1-hour NAAQS for NO₂ and SO₂ in addition to other applicable NAAQS averaging periods. It may not be necessary to conduct a full dispersion model exercise to make this demonstration; however, the applicant should discuss NAAQS protectiveness in their permit documentation.

Even though a NAAQS demonstration is not required for nonattainment review (since the area is already out of compliance with a NAAQS), the applicant must address related minor source and air toxics review issues. For example, in an ozone nonattainment area any VOC emitted to the atmosphere must be evaluated. This may or may not mean that full air dispersion modeling needs to be conducted (for example, screening models can be used, and/or a qualitative type analysis can be performed), but the applicant still needs to ensure that off property impacts from the proposed project do not adversely affect public health or welfare. Also, keep in mind that NO_x is an ozone precursor and has an associated NAAQS. So, if a proposed project has NO_x increases which also trigger PSD, then the PSD air quality analysis requirements will apply even though the project is located in a nonattainment area for ozone.

A similar scenario can apply to HAP reviews. The applicant needs to demonstrate that emissions from the proposed project do not adversely affect public health and welfare. The air toxic review (whether dispersion modeling is conducted, or not) is typically described within the body of the PDS, in the Minor Source NSR and Air Toxics Review Section.

For more details of an air quality analysis associated with a PSD review, see the discussion below:

For PSD. The purpose of this section is to provide the results of the air quality analysis and demonstrate that the project will not cause or contribute to an exceedance of a National Ambient Air Quality Standard (NAAQS) or increment value. The overall analysis may consist of a series of supporting evaluations for the project that address applicable elements such as de minimis impact; ambient air quality; NAAQS, increment, and Class I areas. The applicant must provide the information needed for this section; however, the APD Air Dispersion Modeling Team (ADMT) must audit the applicant's analysis to ensure that the information presented can be used in the technical review. The air quality analysis audit for the project is also known as the executive director's or state air quality analysis, and is included in the Notice of Preliminary Determination. The permit reviewer should refer to the modeling audit and coordinate closely with the modeler that conducted the audit to ensure the quality and clarity of the information summarized in the PDS. The use of tables is highly encouraged in order to organize the data.

In addition, for the NNSR review for ozone, it is possible that an air quality analysis may be required for NO₂, since NO₂ has its own de minimis, monitoring significance, NAAQS and increment. The PSD air quality analysis is distinct from the nonattainment review but is based on the emission limits set by the nonattainment review. Once the NNSR emissions and controls are determined for NO₂, modeling can be conducted. Also note that for NNSR, an air quality analysis is not required for the nonattainment pollutant since the area is not attaining a NAAQS. The area classification and required offsets are discussed in the federal applicability and offsets sections of the PDS.

A. De Minimis Analysis

The permit reviewer should list the pollutants, averaging times, project ground level concentrations (GLCs) in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) as predicted by modeling, de minimis and monitoring significance levels for pollutants that triggered federal review. From that list, the permit reviewer should indicate which of the following analyses were required: 1) Air Quality Monitoring; 2) NAAQS; and 3) Increment.

If all project GLCs are below de minimis, the permit reviewer can remove sections B, C, and D below. Otherwise, only include pollutants in sections B, C, and D as applicable.

Note that lead (Pb) does not have a de minimis so the permit reviewer must fill in sections B and C if Pb is a PSD pollutant. Note that several pollutants do not have monitoring significance levels.

Note that the de minimis for ozone is 100 tpy or more of NO_x or VOC so the permit reviewer must fill in sections B and C if ozone is a PSD pollutant.

B. Air Quality Monitoring

For pollutants that exceed the Monitoring Significance levels, the permit reviewer should review the discussion in the modeling audit report on air quality monitoring and present that information here. Pre-application (aka preconstruction) monitoring may be required but can be waived if the applicant provides representative or conservative data. These data are used to determine existing air quality. The existing air quality concentrations are the background concentrations used in the air quality analysis.

C. National Ambient Air Quality Standards (NAAQS) Analysis

For each applicable pollutant that either exceeds de minimis or for Pb (which does not have a de minimis concentration), the permit reviewer should include the pollutant, averaging period, maximum ground level concentration (GLCmax), background concentration, total impact and NAAQS standard. The total impact is the addition of the NAAQS GLCmax plus the background concentration. The permit reviewer compares the total impact concentration to the NAAQS. If the total impact is greater than the NAAQS, the TCEQ cannot issue and/or approve the permit as proposed. The applicant MUST be able to pass the NAAQS analysis to receive the requested authorization.

Ozone. Unlike other criteria pollutants, ozone is typically formed and not directly emitted (there are a few process types that actually emit ozone itself). The air quality analysis for ozone is typically triggered by ozone precursors. The purpose of the ozone analysis is to demonstrate that a new major source or major modification of an existing major source that could emit 100 tpy or more of VOC and/or NO_x would not cause or contribute to a violation of the 8-hour ozone standard in attainment or unclassifiable areas, or adversely affect attainment or maintenance of the standard in nonattainment areas. The TCEQ does not require single source photochemical modeling for ozone because EPA has no preferred model for this purpose, and thus performs a screening evaluation based on existing air monitors. However, the TCEQ encourages applicants to consult with councils of government or other entities charged with regional ozone responsibilities and conduct modeling using applicable information and databases provided by those entities to predict potential impacts at existing monitor locations. In addition, the ozone impact analysis is complicated by the lack of a de minimis concentration.

If an ozone analysis is required, the permit reviewer should include the qualitative approach (or quantitative approach if the applicant conducted or referred to previously conducted photochemical modeling) used, applicable background monitors, averaging time, background concentration, and comparison with the ozone standard.

D. Increment Analysis

For each applicable pollutant that exceeds de minimis the permit reviewer includes the pollutant, averaging period, GLCmax, and increment. The increment value must be included in the public notice. The permit reviewer will only need to include an increment analysis for pollutants that have an applicable increment (SO₂, PM₁₀, PM_{2.5}, and NO₂), trigger PSD, and exceed de minimis concentrations. PSD pollutants that do not have an increment do not need to be included. Note that PM_{2.5} increment can only be triggered in an area after October 20, 2011. The trigger date is a fixed date that triggers the overall increment consumption process nationwide. In other words, the date when the PM_{2.5} increments become effective under the federal PSD program.

E. Additional Impacts Analysis

The purpose of the additional impacts analysis is to provide an assessment of the project's effect on the overall environment. The additional impacts analysis consists of a growth analysis; soils and vegetation analysis; a visibility impairment analysis for Class II areas, and a Class I impacts analysis. The applicant should address impacts caused by increases in emissions of any regulated pollutant from the source or modification under review, and from associated growth job creation, as well as impacts to Class I Air Quality Related Values (AQRVs).

The growth analysis evaluates the impact associated with the project on the general commercial, residential, and industrial growth within the Area of Impact (AOI). An in-depth growth analysis would only be required if the project would result in a significant shift of population and associated activity into an area (that is, a population increase on the order of thousands of people).

The soils and vegetation analysis evaluates the impact associated with the project on soils and vegetation within the AOI. Modeling results from the NAAQS analysis can usually be used for this analysis. For pollutants without NAAQS, the property-line review and health effects review can be used.

The Class II visibility impairment analysis evaluates the impact associated with the project on the visibility within the AOI. The visibility analysis required here is distinct from the Class I area visibility analysis requirement. The applicant can meet the requirement for the Class II visibility analysis by acknowledging compliance with the visibility and opacity requirements in 30 TAC Chapter 111.

A Class I impacts analysis is required for facilities locating within 100 kilometers (km) of a Class I area. If this is the case, the TCEQ should have notified the appropriate Federal Land Manager (FLM), and the applicant should have provided the FLM with information and any AQRV analysis as requested. The FLM and EPA have expanded their interest area to approximately 300 km. To accommodate this interest the permit reviewer should discuss in the PDS why adverse impacts are not expected. Visibility (aka regional haze) is always an AQRV.

F. Minor Source NSR and Air Toxics Review (As Applicable)

For PSD, NNSR, and HAP (if applicable). The purpose of the minor source NSR and air toxics review section is to summarize the technical review of federally regulated pollutants that did not trigger a major NSR review but were evaluated by the applicant to meet minor NSR requirements. The review could be to demonstrate compliance with the NAAQS, state standards for sulfur compounds, or to demonstrate no adverse health and welfare effects following the Modeling and Effects Review (MERA) process for hazardous air pollutants and federally regulated pollutants without standards.

The permit reviewer should specify if site-wide modeling was conducted and for what pollutants. Conducting this review does not necessarily mean that air dispersion modeling was performed. If a qualitative analysis was performed instead, provide a short description of what was done (similar to that included in the technical review). Examples include steps on the MERA flowchart, emission comparisons, large reduction in emissions (describe), previous modeling and/or ratio technique, etc.

If the results of the modeling analysis indicate that the concentrations evaluated were above their respective effects screening levels (ESLs), the permit reviewer should indicate that the Toxicology Division reviewed off-property impacts for the pollutant and considered the impacts to be acceptable. The permit reviewer should specify if site-wide modeling was conducted and for what pollutants.

If a source is major for HAP (a source is major for HAP when the emission rates equal or exceed 10 tpy for an individual HAP and 25 tpy for collective HAP), and there is no MACT standard, the 112(g) HAP review is a control technology review and off-property impacts are evaluated as a part of the state's air toxics review. The toxics review is also required if during the applicability review the source is determined to be minor.

VIII. Offsets

For NNSR review. The purpose of this section is to list required offsets, offset ratio used, and how the applicant will provide them. Use the listed classifications and offset ratios:

Marginal: 1.10 to 1

Moderate: 1.15 to 1

Serious: 1.20 to 1

Severe: 1.30 to 1

IX. Alternate Site Analysis and Compliance Certification

For NNSR review. The analysis must demonstrate that the benefits of the proposed location and source configuration significantly outweigh the environmental and social costs of that location.

X. Conclusion

This section applies to all authorizations. The permit reviewer includes a brief summary statement that states the applicant demonstrated the project meets all applicable rules, regulations and requirements of the Texas and Federal Clean Air Acts and that the permit should be issued.

Appendix A

Preliminary Determination Summary Checklist

Header (centered on first page and left indent for subsequent pages)

Preliminary Determination Summary

Permit Number(s)

Page numbers on subsequent pages

I. Applicant

All. Company Name, P.O. Box (or address), County - State - ZIP Code

II. Project Location

All. Nearest city, county, ZIP Code

III. Project Description

All. Is the project clearly described so that the public can understand it?

Are all emission units included? Are planned maintenance, startup, and shutdown (MSS) activities addressed?

IV. Emissions

PSD, NNSR, PAL. Have all applicable federally regulated pollutants been reviewed?

Did the proposed project affect PM₁₀/PM_{2.5}? Did the applicant describe/explain that condensable PM₁₀/PM_{2.5} emissions (back half catch) were included in the review along with the filterable PM₁₀/PM_{2.5} emissions (front half catch), therefore indicating that the proper values were used in the NAAQS analysis?

HAP. Have all applicable HAP(s) without a MACT standard been reviewed?

All. Is MSS being authorized? If so, how are these types of emissions addressed?

Are the emissions authorized as a separate identified MSS category (either as individual emission rates or grouped/capped emission rates) on the maximum allowable emission rate table (MAERT)? Included within the units expected normal/production (boilers for example)?

V. Federal Applicability

For PSD and NNSR

For each criteria pollutant, has the designation of the county in which the project will be located been determined (attainment/unclassified or nonattainment)?

If the project is in an ozone nonattainment area, did the permit reviewer indicate if NO_x/VOC will be emitted?

If the project is in a nonattainment area, is the nonattainment classification of that area listed? (Marginal, moderate, serious, severe)

Is the source a named source or unnamed source (major source definition 100 tpy or 250 tpy, respectively)?

Have the pollutants for which PSD and/or Nonattainment review applies been identified?

Do the emissions include MSS? If not, does the summary indicate this fact? If so, are they contained within the authorized facilities allowable, or are MSS emissions authorized separately?

Has the federal applicability analysis been conducted for each federally regulated pollutant?

For “project” increases, were baseline actual emission rates compared to either the potential to emit (PTE) or the projected actual emission?

Does the PDS include emission changes for a specific pollutant below the level used to determine if the project is a “major project” or, if contemporaneous netting is triggered and the project “nets out”?

Table 1

Pollutant	Project Increase (tpy)¹	NA Netting Trigger (tpy)	PSD Netting Trigger (tpy)	Netting Required Y/N	Net Emission Change (tpy)²	Major Mod Trigger (tpy)	PSD Triggered Y/N	NA Triggered Y/N
VOC ³								
NO _x ^{3,4}								
SO ₂ ⁴								
CO								
PM								
PM ₁₀								
PM _{2.5} ⁵								
H ₂ SO ₄								
H ₂ S								
Pb								
Fluorides ⁶								
Other								

Note: Nonattainment (NA) significance levels (trigger levels) should follow current Federal New Source Review (FNSR) guidance, and be based on the classification of the NA area in which the project is proposed.

¹Project Increases: Comparison of Baseline Actual to PTE (or Projected Actual) Increases only

²Net Emissions: Baseline Actual to PTE (or Projected Actual) for the project currently under review, Baseline Actual to PTE for all other increases and decreases within netting window.

³Ozone precursor. Either pollutant precursor can trigger BACT/LAER and impacts analysis, as applicable.

⁴PM_{2.5} precursor. Not used to trigger PM_{2.5} BACT/LAER or impacts analysis at this time.

⁵Use PM₁₀ emissions only if PM_{2.5} emissions cannot be quantified or estimated. (PM_{2.5} Implementation Plan).

⁶Excluding Hydrogen Fluoride (HF)
Were pollutants that did not trigger a PSD review addressed in the Minor NSR and Air Toxics Section?

For HAP

Did the permit review describe the applicable HAP and emissions and the reason why there is a need to perform a case-by-case MACT determination for the HAP?

Were HAPs that did not trigger the definition of a new or reconstructed major source included in the Minor NSR and Air Toxics Section?

Do the emissions include MSS? If not, does the summary indicate this fact? If so, are they contained within the authorized facilities allowable, or are MSS emissions authorized separately?

For PAL

Did the applicant choose a two-year baseline period that represents the highest rolling 24-month period during the previous ten years (five years for electric utilities) for each pollutant covered by the PAL?

Did the permit reviewer list the period, emissions in tpy, and describe PAL limits for each pollutant.

Do the emissions include MSS? If not, does the summary indicate this fact? If so, are they contained within the authorized facilities allowable, or are MSS emissions authorized separately?

VI. Control Technology Review

For PSD, NNSR, and HAP

Did the permit reviewer identify the particular pollutants that trigger the review, and discuss applicable controls for each applicable pollutant?

- Best Available Control Technology (BACT) for PSD review
- Lowest Achievable Emission Rate (LAER) control technology for NNSR review (or BACT in limited cases, as allowed by the EPA's FNSR rules)
- Maximum achievable control technology (MACT) for HAP review.

Is it clear in the PDS what the company and permit reviewer did to evaluate the proposed project against technologies contained within the RACT/BACT/LAER Clearinghouse (RBLC) and permits recently issued/approved in Texas and other states, etc.?

If a certain technology was ruled out because of technical practicability or economics (in the case of PSD), was the rationale reasonable?

For HAP: Did the applicant show that the proposed emission limitation is not less stringent than the emission limitation achieved in practice (the facility is in operation) by the best controlled similar facility?

If cost, energy requirements or non-air quality health and environmental impacts were used to determine less control for the applicant was the rationale reasonable?

Remember, even if a source of HAP is not major, and/or a 112(g) review is not required, BACT will still be required as a part of the TCEQ's Minor NSR permitting program.

For All

If MSS activities and emissions are authorized, did the permit reviewer discuss the applicable control technology analysis conducted specific to the MSS activities and emissions?

If a Flexible Permit is involved, was it necessary to remove certain facilities from the emissions caps and give them their own individual emission limit to ensure that federal review is not triggered?

Were any individual emission limits placed into the flexible permit to provide for a federally enforceable emission rate, or make an actual emission reduction federally enforceable?

VII. Air Quality Analysis

Did the applicant demonstrate that the proposed project's emissions will not adversely affect public health and welfare, which includes the National Ambient Air Quality Standards (NAAQS), PSD increment, additional impacts, minor new source review of regulated pollutants without a NAAQS, and air toxics review?

For PSD

Were all applicable parts of the analysis listed (de minimis; air quality monitoring, NAAQS, PSD increment, additional impacts analysis, minor new source review, and air toxics)? See the Air Quality Analysis audit.

For NNSR review for ozone, did NO_x emissions trigger a PSD review for NO₂? If so, did the permit reviewer determine if de minimis, monitoring significance, NAAQS and increment was required for NO₂, and was the PSD air quality analysis based on the emission limits set by the nonattainment review?

A. De Minimis Analysis

For pollutants that triggered federal review, were all pollutants, averaging times, project GLCs, de minimis, and monitoring significance levels included?

From that list, were the following analyses required?

1. Air Quality Monitoring?
2. NAAQS? Note lead and ozone do not have a de minimis concentration. 100 tpy or more of VOC and/or NO_x trigger an ozone impacts analysis that includes the need to obtain air quality monitoring data.
3. Increment? Only SO₂, NO₂, PM₁₀, and PM_{2.5}, have increments. Note that PM_{2.5} increment can only be triggered in an area after October 20, 2011. The trigger date is a fixed date that triggers the overall increment consumption process nationwide. In other words, the date when the PM_{2.5} increments become effective under the federal PSD program.

Were emissions 0.6 tpy or more for Pb? If so, an Air Quality Monitoring and NAAQS analysis is required as Pb does not have a de minimis impact threshold under the NAAQS.

Were emissions 100 tpy or more of NO_x or VOC? If so, an ozone Air Quality Monitoring and NAAQS analysis is required.

B. Air Quality Monitoring

Did any pollutants exceed Monitoring Significance levels? If so, did the permit reviewer present applicable information here?

Were emissions 0.6 tpy or more for Pb? If so, an Air Quality Monitoring analysis is required.

Were emissions 100 tpy or more of NO_x or VOC? If so, an ozone Air Quality Monitoring analysis is required.

Was pre-application (aka preconstruction) monitoring required but waived because the applicant provided representative or conservative data instead? The applicant should consider this requirement before the permit application is submitted.

Were existing air quality concentrations used in the air quality analysis as background concentrations?

C. National Ambient Air Quality Standards (NAAQS) Analysis

Did the permit reviewer include applicable pollutants from the de minimis section?

Were emissions 0.6 tpy or more for Pb? If so, a NAAQS analysis is required.

Were emissions 100 tpy or more of NO_x or VOC? If so, an ozone NAAQS analysis is required.

For each applicable pollutant did the permit reviewer include the pollutant, averaging period, GLCmax, background concentration, total impact, and NAAQS standard?

Was the total impact greater than the NAAQS? If the total impact is greater than the NAAQS, the TCEQ cannot issue and/or approve the permit as proposed. The applicant MUST be able to pass the NAAQS analysis to receive the requested authorization.

If an ozone analysis was required, did the permit reviewer include the qualitative approach (or quantitative approach if the applicant conducted or referred to previously conducted photochemical modeling) used; applicable background monitors; averaging time; background concentration; and comparison with the ozone standard.

D. Increment Analysis

Did the permit reviewer include applicable pollutants that exceeded de minimis? (SO₂, PM₁₀, PM_{2.5}, and NO₂). Note that PM_{2.5} increment can only be triggered in an area after October 20, 2011. The trigger date is a fixed date that triggers the overall increment consumption process nationwide. In other words, the date when the PM_{2.5} increments become effective under the federal PSD program.

For each applicable pollutant did the permit reviewer include the pollutant, averaging period, and increment?

PSD pollutants that do not have an increment do not need to be included.

E. Additional Impacts Analysis

Were the following additional impacts addressed in the PDS?

1. Growth analysis? Did the permit reviewer include an evaluation of the impact associated with the project on the general commercial, residential, and industrial growth within the area of impact (AOI)? An in-depth growth analysis would only be required if the project would result in a significant shift of population and associated activity into an area (that is, a population increase on the order of thousands of people).

2. Soils and vegetation analysis? Did the permit reviewer include an evaluation of the impact associated with the project on soils and vegetation within the AOI?

Were any specific issues related to soils and vegetation identified by the public? If yes, the applicant should have conducted a demonstration to address the issues. If not, modeling results from the NAAQS analysis can usually be used for this analysis. For pollutants without NAAQS, the property-line review and health effects review can be used.

3. Visibility impairment analysis for Class II areas? Did the permit reviewer include the visibility analysis required? This evaluation is distinct from the Class I area visibility analysis requirement. The applicant can meet the requirement for the Class II visibility analysis by acknowledging compliance with the visibility and opacity requirements in 30 TAC Chapter 111.
4. Class I impacts analysis? Did the permit reviewer include an evaluation of the project's impact on any Class I areas within 100 kilometers (km)? The applicant should address impacts caused by increases in emissions of any regulated pollutant from the source or modification under review, to Class I air quality related values (AQRVs). Note visibility (aka regional haze) is always an AQRV.

Is the project within 100 kilometers (km) of a Class I area? If so, was the appropriate federal land manager (FLM) contacted?

Did the applicant provide the FLM with information and any AQRV analysis as requested? If so, did the FLM ask for additional controls?

Did the permit reviewer discuss the potential for adverse impacts in the PDS?

Note: the FLM and EPA have expanded their interest area to approximately 300 km. To accommodate this interest did the permit reviewer discuss why adverse impacts are not expected for projects locating with 300 km?

F. Minor Source NSR and Air Toxics Review

Did the permit reviewer address all federally regulated pollutants, including HAP in this section if they have not been addressed in previous sections?

If a source is major for HAP (A source is major for HAP when the emission rates equal or exceed 10 tpy for an individual HAP and 25 tpy for collective HAP, and there is no MACT standard), the 112(g) HAP review is a control technology review. Off-property impacts are evaluated as a part of the states air toxics review.

Did the permit specify if site-wide modeling was conducted and for what pollutants?

Did the permit reviewer include the pollutant or contaminant, averaging time, GLCmax and applicable de minimis, standard, or ESL?

If modeling was not conducted, was a qualitative analysis performed and did the permit reviewer describe what was done to meet the objectives of this section?

For concentrations above ESLs, did the permit reviewer indicate that the Toxicology Division reviewed off-property impacts for the pollutant and considered the impacts to be acceptable?

VIII. Offsets

NNSR. Did the permit reviewer list required offsets, offset ratio used, and how the applicant will provide them?

IX. Alternate Site Analysis and Compliance Certification

NNSR. Did the analysis demonstrate that the benefits of the proposed location and source configuration significantly outweigh the environmental and social costs of that location?

X. Conclusion (NNSR); IV. Conclusion (PAL); VIII. Conclusion (PSD, HAP)

Did the permit reviewer state that the applicant demonstrated the project meets all applicable rules, regulations and requirements of the Texas and Federal Clean Air Acts and that the permit should be issued?