



January 2001
Draft RG-10232

Technical Guidance Package for:

Prevention of
Significant
Deterioration
(PSD) Air Quality

printed on
recycled paper

Air Permits Division

TEXAS NATURAL RESOURCE CONSERVATION



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Published and distributed by:
Texas Natural Resource Conservation Commission
P.O. Box 13087
Austin, Texas 78711-3087

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Texas Natural Resource Conservation Commission (TNRCC)
Prevention of Significant Deterioration (PSD) Review
PSD AIR QUALITY
GUIDANCE DOCUMENT

A permit applicant must complete a Table PSD-1 if PSD netting is required or requested by the permit engineer. The purpose of this guidance document is to provide more detail to Table PSD-1 and to take the applicant through the basics of PSD review. For information regarding PSD applicability and review, please refer to Title 40 Code of Federal Regulations Part 52, Section 21 (40 CFR Part 52.21) and U.S. Environmental Protection Agency (EPA's) Draft *New Source Review Workshop (NSR) Manual* of October 1990 which provides examples for illustration.

PSD APPLICABILITY REVIEW:

This section explains how to determine whether PSD Review applies to a specific new source or to a modification of an existing source. Figure 1 is a flow chart which provides an overview of the applicability determination to be conducted for each regulated pollutant.

A. Emissions (Existing and Proposed):

Existing site potential to emit: For each regulated pollutant, add all emissions on the property. Allowable emission levels (potential to emit) are used for permitted sources, and potential to emit¹ is used for grandfathered facilities. For exempt sources, the potential to emit is either the maximum emissions the sources are capable of producing, or the limitation that is specified by exemption or that is made federally enforceable by a PI-8 Form. Fugitive emissions are only included in the potential to emit if the source is one of the 28 named source categories in 40 CFR

¹ Since the grandfathered rates are (generally) not federally enforceable, they can not be used in the determination of whether the source is major or not. The potential to emit is used only in the determination of whether the source is major.

Part 52.21(b)(1) (see Table A for a list of the 28 named source categories) or belongs to a stationary source category that is subject to an New Source Performance Standard (NSPS) proposed prior to August 7, 1980 (see Table E for a list of applicable NSPS) or that is subject to an National Emission Standards for Hazardous Air Pollutants (NESHAPS) promulgated prior to August 7, 1980 (see Table F for a list of applicable NESHAPS).

Proposed project increases: For each pollutant, subtract the actual emissions (average of the actual emissions over the two years immediately prior to the proposed project) from the new allowable emissions. Fugitive emissions are only included in the potential to emit if the source is one of the 28 named source categories in 40 CFR Part 52.21(b)(1) (see Table A for a list of the 28 named source categories) or belongs to a stationary source category that is subject to an NSPS proposed prior to August 7, 1980 (see Table E for a list of applicable NSPS) or that is subject to an NESHAPS promulgated prior to August 7, 1980 (see Table F for a list of applicable NESHAPS).

Regulated Pollutant²:							
Existing site potential to emit (tpy)							
Proposed project increases (tpy)							

B. Nonattainment NSR Applicability.

Will the proposed project be located in an area that is designated nonattainment for any of the pollutants listed in Part A above? Please note that

²Regulated pollutants include criteria pollutants (pollutants for which a National Ambient Air Quality Standard [NAAQS] exists) and noncriteria pollutants (pollutants regulated by EPA for which no NAAQS exists). See Table B for specific values.

in certain areas both nitrogen oxides (NO_x) and volatile organic compounds are regulated as precursors to ozone. Therefore, NO_x should be considered in both ozone nonattainment review (unless exempted under 30 TAC Section 116.150) and NO_x PSD review. Figure 2 is a map of designated nonattainment areas.

G Yes Attach Table 1N. The applicant must perform a nonattainment applicability review for the qualifying pollutant(s). Please refer to the “Nonattainment NSR Guidance Manual” for specific details regarding nonattainment applicability and review.

G No Nonattainment NSR is not required.

Go to Part C of this section. Once an existing site or proposed project has been determined to be a major source (see Part C below), PSD applicability review should be conducted for each regulated pollutant for which the area is attainment or unclassifiable for that pollutant. Likewise, nonattainment applicability review should be conducted for each regulated pollutant for which the area has been declared nonattainment for that pollutant.

C. Major source determination: A named major stationary source is any source belonging to a list of 28 source categories in 40 CFR Part 52.21(b)(1) (see Table A for a list of the 28 named source categories) which emits or has the potential to emit 100 tons per year (tpy) or more of any pollutant subject to regulation under the Federal Clean Air Act. A major stationary source is any source not belonging to the 28 named source categories which emits or has the potential to emit such pollutants in amounts equal to or greater than 250 tpy. A stationary source generally includes all pollutant emitting activities which belong to the same industrial grouping, are located on contiguous or adjacent properties, and are under common ownership or control. Include fugitive emissions in the potential to emit if the source is one of the 28 named source categories or belongs to a stationary source category that is subject to an NSPS proposed prior to August 7, 1980 (see Table E for a list of applicable NSPS) or that is subject to an NESHAPS promulgated prior to August 7, 1980 (see Table F for a list of applicable NESHAPS).

C1. Is the existing site one of the 28 named sources?

G Yes The existing site is one of the 28 named sources. Therefore, the existing site has a major source threshold of 100 tpy.

G No The existing site is not one of the 28 named sources. Therefore, the existing site has a major source threshold of 250 tpy.

C2. Is the existing site a major source? For each pollutant, compare the existing site potential to emit to the applicable major source threshold determined in Part C1 of this section.

G Yes The existing site has the potential to emit at least one pollutant at or above the applicable major source threshold determined in Part C1 of this section. Go to Part D of this section.

G No The existing site potential to emit any pollutant is less than the applicable major source threshold determined in Part C1 of this section. Go to Part C3 of this section.

C3. Is the proposed project by itself one of the 28 named sources?

G Yes The proposed project by itself is one of the 28 named sources. Therefore, the proposed project has a major source threshold of 100 tpy.

G No The proposed project is not one of the 28 named sources. Therefore, the proposed project has a major source threshold of 250 tpy.

C4. Is the proposed project a major source by itself? For each regulated pollutant at an **existing non-major site** compare the proposed project emissions increases to the applicable major source threshold in Part C3 of this section (no consideration is given to any emissions decreases).

G Yes The potential emissions increase of at least one pollutant from the proposed project by itself equals or exceeds the rate of the applicable major source threshold determined in Part C3 of this section. Once the project is considered major, **all** other pollutants are compared to the major modification level in 40 CFR Part 52.21(b)(23). **PSD review is required for each regulated pollutant (for which the location of the source is not classified as nonattainment) with “significant” emissions. Netting is not allowed.** Significant emissions are defined in 40 CFR Part 52.21(b)(23) and are listed in Table B of this document. Go to the PSD Review section of this document.

G No Stop. PSD review is not required.

D. At an existing major source, is netting required? Netting is required for each regulated pollutant for which the proposed project increases (decreases are not considered yet) result in a significant increase in emissions. Significant emissions are defined in 40 CFR Part 52.21(b)(23) and are listed in Table B of this document.

G Yes Proceed to Part E of this section.

G No Stop. PSD review is not required.

E. Netting:

E1. Define the Contemporaneous period.

- a. ___/___/___ Date of estimated start of construction.
- b. ___/___/___ Five years prior to estimated start of construction date.
- c. ___/___/___ Date of estimated start of operation.
- d. ___/___/___ to ___/___/___ Contemporaneous period (b. to c.). From five years prior to estimated start of construction through estimated start of operation.

E2. Identify creditable, contemporaneous increases and reductions. Use a separate Table PSD-2 for each pollutant for which the netting exercise is performed. For each pollutant, list the creditable contemporaneous increases and decreases **resulting from physical or operational changes** on the Table PSD-2. Attach a Table PSD-3 for each project reduction claimed which explains how the reduction is creditable. The requirements for creditable increases and reductions are listed below.

- The increases/reductions occurred within the contemporaneous period.
- For each unit at the source at which the change occurred, the increases/reductions were calculated as the allowable emissions after the change minus the actual emissions averaged over the two-year period immediately preceding the change.
- The increases/reductions occurred at the applicant's contiguous or adjacent plant site and came from units under the same common ownership or control.

- The reductions have not been relied upon in issuing a previous PSD permit (including use in netting for a PSD permit).
- The reductions have not been relied upon in issuing a nonattainment permit and the reductions have not been used as an offset¹ in a nonattainment permit or reserved in an application for use as an offset.
- The reductions will be federally enforceable² by the start of construction of the proposed project and actually accomplished by the start of operation.
- The reductions have the same qualitative significance for public health as the increase from the proposed project.

Note: A reduction cannot occur at, and therefore, cannot be credited from an emissions unit which was never constructed or operated, including units that received a PSD permit.

- 1 An offset is a required reduction of equal or greater magnitude (depending on the nonattainment area) than the emissions increase from the project for which nonattainment new source review is being conducted. An offset does not refer to reductions used in nonattainment netting calculations.
- 2 To ensure federal enforceability for exemptions at emission levels below those levels specified by the exemptions specifically in use, or by 30 TAC § 116.211, the applicant should keep on-site a signed registration certification Form PI-8, verifying the maximum emission rate resulting from operations authorized by an exemption. The registration and certification must include the basis for estimating the emission rate.

To ensure federal enforceability of grandfathered emission rates, the grandfathered emission rates should be incorporated into the conditions of an existing State permit on-site or into an Agreed Order if no such permit exists.

E3. Complete the table below.

a. **Determine the significance level of each regulated pollutant.**

Significance levels are defined in 40 CFR Part 52.21(b)(23) and are listed in Table B of this document.

b. **Sum the creditable, contemporaneous increases and reductions identified in Part E.2 above with the proposed project increases and reductions.**

c. **Does the net emissions increase constitute a major modification?** In other words, does the net emissions increase of at least one pollutant (calculated in Part E3.b) equal or exceed the significance level for that pollutant? Answer “yes” or “no” under each pollutant in the table below.

If “yes,” then PSD Review is required for each pollutant for which the net emissions increase of that pollutant (calculated in Part E3.b) equal or exceed the significance level for that pollutant. Go to the PSD Review section of this document.

If “no,” then stop. PSD review is not required for that pollutant.

Regulated Pollutant:							
Significance level as defined in 40 CFR Part 52.21(b)(23)							
Net contemporaneous change from Table PSD-2 (tpy)							
Is PSD review applicable? Answer "Yes" or "No" under each pollutant.							

PSD REVIEW:

If PSD review is required, then the applicant must send a complete application to EPA Region 6 at the address below. EPA Region 6 must also receive copies of all subsequent correspondence.

EPA Region 6
New Source Review Section
1445 Ross Avenue
Dallas, TX 75202-2733

For more information regarding PSD review, please refer to 40 CFR Part 52.21 and EPA's Draft *New Source Review Workshop Manual* of October 1990 which provides examples for illustration. EPA's Draft *New Source Review Workshop Manual* of October 1990 is available through Air and Waste Management Association at P.O. Box 2861, Pittsburgh, Pennsylvania 15230; (412) 232-3444 and EPA's Technology Transfer Network (TTN) electronic bulletin board.

- 1. PROPOSE BEST AVAILABLE CONTROL TECHNOLOGY (BACT)** - Any major stationary source or major modification subject to PSD must conduct an analysis to ensure the application of BACT for each pollutant/emissions source subject to PSD review. The analysis considers the technical practicability and

economic reasonableness of control options using TNRCC's three-tiered approach. For additional information regarding BACT review, please refer to the TNRCC *BACT Guidance Document* which provides examples for illustration.

TIER I: In the first tier, controls accepted as BACT in a recent permit review for the same process/industry are approvable as BACT in a current review if no new technical developments have been made which would justify additional controls as economically or technically reasonable. The review of control technologies under the first tier is relatively straightforward in that technical practicability and economic reasonableness have already been demonstrated by use. The applicant is also expected to check EPA's RACT/BACT/LAER Clearinghouse and Control Technology Center to identify all demonstrated and potentially applicable control technology alternatives.

TIER II: The second tier takes into account controls which have been accepted as BACT in recent permits for similar streams in a different process/industry. The second tier may require additional research to review cross technology, but an in-depth economic analysis is avoided since economic reasonableness has already been demonstrated by use.

TIER III: The third tier of review is a detailed technical and economic analysis of all control options available for the process being reviewed. Technical practicability aspects include the demonstrated success of the control technology as determined by previous use, an assessment of the technical success of a new technology, and/or the availability and reliability of the proposed control system. Economic reasonableness is determined solely in the cost effectiveness of controlling emissions and does not take into account the effect of control cost on corporate economics. It is evaluated on a dollar per ton (\$/ton) basis considering both incremental and total tons controlled, although the focus is

primarily on the \$/total ton number. The third tier of review is rarely necessary because technical practicability and economic reasonableness have usually been firmly established by industry practice as identified in the first two tiers.

2. **SUBMIT AN AIR QUALITY ANALYSIS** - An applicant for a PSD permit is required to conduct an air quality analysis of the ambient impacts associated with the construction and operation of the proposed new source or modification to demonstrate that new emissions emitted from the proposed major stationary source or major modification, in conjunction with other applicable emissions from existing sources (including secondary emissions), will not cause or contribute to a violation of any applicable National Ambient Air Quality Standard (NAAQS) or PSD increment.

A NAAQS is a maximum total concentration limit of a pollutant in the atmosphere. Compliance with any NAAQS is based upon the total estimated air quality (impacts from existing sources and the proposed net emissions increase plus measured background concentrations). The PSD increment for a pollutant is the maximum allowable increase in concentration that is allowed to occur above a baseline concentration. Baseline concentration is the reference point for determining air quality deterioration in an area. In other words, the baseline concentration is the ambient concentration of the pollutant existing prior to the baseline date. Emissions changes which occur after the applicable baseline date affect the amount of available PSD increment. The major source baseline date is the date after which actual emissions associated with physical changes or changes in the method of operation at a major stationary source affect the available PSD increment. The major source baseline date is January 6, 1975 for particulate matter (PM) and sulfur dioxide (SO₂) and February 8, 1988 for nitrogen dioxide (NO₂). Changes in actual emissions occurring at any non-major source after the major source baseline date do not affect the increment, but instead contribute to the baseline concentration until after the minor source baseline date is established. The minor source baseline date

is the earliest date after the trigger date on which a major source or modification submits a complete PSD application in a particular area. The trigger date is August 7, 1977 for PM and SO₂ and February 8, 1988 for NO₂.

A separate air quality analysis must be submitted for each regulated pollutant that the applicant proposes to emit in a significant amount from (which includes any pollutant emitted from a proposed new or modified source located within 10 kilometers of a Class I area whose rate of emissions would have an ambient impact on such area equal to or greater than 1 µg/m³, 24-hour average) a new major stationary source, or proposes to cause a significant net emissions increase from a major modification.

Generally the air quality analysis will involve an assessment of existing air quality which may include ambient monitoring data and predictions using air dispersion modeling of ambient concentrations that will result from the applicant's proposed project and future growth associated with the project.

BASIC STEPS IN THE AIR QUALITY ANALYSIS:

Please refer to the TNRCC publication *Air Quality Modeling Guidelines* for additional information. The modeling section should be consulted prior to starting any modeling exercises.

Dispersion Modeling Analysis

A. Preliminary Analysis

STEP 1: Model the impact of the proposed significant (net) emissions increase for new or modified sources. If representative meteorological data (One year of site specific or five consecutive years of the most recent data from the nearest National Weather Service station or alternate equivalent weather station) is not available on-site meteorological monitoring may be required.

STEP 2: Determine if predicted concentrations of the pollutant equal or exceed the air quality significance level (de minimis) defined in 40 CFR § 51.165(b)(2) (see NAAQS de minimis column of Table C of this document). Are predicted concentrations of the pollutant at or above de minimis?

9 No - No further NAAQS or PSD increment analysis is required for the pollutant.

9 Yes - Full impact analysis is required.

B. Full Impact Analysis:

STEP 1: Determine the radius of impact for the area of impact (AOI) for each pollutant subject to the NAAQS analysis using modeling results from Step 2 above. A project's AOI contains the receptors that equal or exceed de minimis for each pollutant and averaging period. The radius of impact is the farthest distance from the source under review where concentrations are predicted to equal or exceed de minimis for each applicable averaging time and pollutant. The largest radius for each pollutant regardless of averaging period is used for the rest of the analysis. This radius is limited to the lessor of the actual distance or 50 kilometers.

STEP 2: Obtain a primary retrieval from the Point Source Data Base (PSDB). The primary retrieval is made for the radius of impact plus 50 kilometers and identifies sources that could cause a significant impact within the AOI. (Sources whose contributions would not equal or exceed the applicable de minimis may be omitted.) Inquiries or questions for PSDB retrieval information should be made to the TNRCC Information Resources (IR) Division, Customer Reports and Services at (512) 239-DATA(3282). Written requests are required to obtain a retrieval, and may be sent by fax to (512) 239-0888. For

detailed information regarding PSD retrievals, refer to the TNRCC publication *Air Quality Modeling Guidelines*

STEP 3: Demonstrate compliance with the NAAQS (see Table C of this document for NAAQS levels). Compare the combined concentration (predicted plus background) for each pollutant to the appropriate NAAQS. Predicted concentrations are determined by modeling allowable emission rates (actual emission rates for sources that do not have an allowable emission rate) for all sources that emit the regulated pollutant within the area of impact. Background air quality includes pollutant concentrations due to natural sources, nearby sources other than the one(s) under consideration, and unidentified sources. Ambient air quality monitoring concentrations can be used to represent background concentrations, and can be obtained, if available, by contacting the TNRCC Monitoring Operations Division Data Management and Analysis Section.

After the NAAQS analysis has been completed, additional modeling may be required if a predicted concentration will exceed a NAAQS, and the permitted sources are predicted to make a significant impact at the same time and location of a NAAQS exceedance.

STEP 4: Demonstrate compliance with the PSD increment (see Table C of this document for PSD increment levels). The amount of PSD increment that has been consumed in a PSD area is determined from the emissions increases and decreases which have occurred from sources since the applicable baseline date. An applicant does not need to determine the baseline concentration to determine the amount of PSD increment consumed or the amount of increment available. Instead, increment consumption calculations reflect the ambient pollutant concentration change attributable to increment-affecting emissions.

Increment consumption (or expansion) calculations should be based on the difference between the existing actual emission rate and the baseline date actual emission rate. Actual is defined as the most recent, representative two-year average for long-term rates, or the maximum short-term rate in the two-year period.

See modeling guidance document for particular instructions regarding the modeling exercise.

C. Monitoring Requirements

Determine the need for pre-application air quality monitoring. The TNRCC may exempt the applicant from this requirement if either (1) the highest modeled concentration for the applicable averaging time caused by the proposed significant (net) emissions increase, or (2) the modeled concentration of other on- and off-property sources is less than the prescribed significant monitoring value in 40 CFR Part 52.21(I)(8)(I) (see PSD Monitoring Exemption column of Table C of this document). If a potential threat to the NAAQS is identified by the modeling predictions, the continuous monitoring data may be required, even if the project meets the requirements for this exemption. The applicant should establish the need for an exemption from monitoring requirements as soon as possible through discussion with the TNRCC.

If pre-application air quality monitoring is required, submit a monitoring plan for review and approval before actual monitoring begins. Perform at least one year (representing at least the 12-month period immediately preceding the PSD application) of continuous ambient monitoring data for any criteria pollutant proposed to be emitted in significant amounts. Less than one year of data may be acceptable if a complete and adequate analysis can be accomplished with the resulting data. In no cases should the data be collected

over a timeframe shorter than four months. (The TNRCC could require air quality monitoring data for noncriteria pollutants in certain cases.)

As an alternative, the applicant can supply data from an existing monitoring network. If these concentrations meet EPA requirements for representativeness, then an exemption from pre-construction monitoring may be granted. Data from state monitors can be obtained from the TNRCC Monitoring Operations Division Data Management and Analysis Section.

3. PERFORM AN ADDITIONAL IMPACT ANALYSIS. The additional impact analysis has four parts:

PART 1: The growth analysis includes a projection of the associated industrial, commercial, and residential source growth that will occur in the area due to the source, and an estimate of the air emissions generated by this growth.

PART 2: The ambient air quality analysis projects the air quality which will exist in the area of the proposed source or modification during construction and after it begins operation.

PART 3: The analysis of soils and vegetation air pollution impacts should include all vegetation with any commercial or recreational value found in the impact area.

PART 4: The visibility impairment analysis should include a determination of the visual quality of the area, initial screening of emission sources to assess the possibility of visibility impairment, and possibly a more in-depth analysis involving computer models.

Other impact analysis requirements may also be imposed on a permit applicant under local, State or Federal law which are outside the PSD permitting process. For example, two Federal laws which may apply on occasion are the *Endangered Species Act* and the *National Historic Preservation Act*.

- 4. PERFORM A CLASS I AREA IMPACT ANALYSIS.** Class I areas are areas of special national or regional value from a natural, scenic, recreational, or historic perspective. There are three kinds of Class I areas which have been or may be designated as mandatory Federal Class I areas, Federal Class I areas, and non-Federal Class I areas. Mandatory Federal Class I areas may not be reclassified to Class II or Class III areas and are those areas specified as Class I by the Clean Air Act on August 7, 1977. Mandatory Federal Class I areas include international parks, national wilderness areas which exceed 5,000 acres in size, national memorial parks which exceed 5,000 acres in size, and national parks which exceed 6,000 acres in size. Federal Class I areas are managed by the Forest Service, the National Park Service, or the Fish and Wildlife Service. State or Indian lands reclassified as Class I are considered non-Federal Class I areas. Table D of this document is a list of mandatory Class I areas in Texas and surrounding states.

STEP 1: Identify all Class I areas potentially affected. Generally, sources within 100 km of Class I should be evaluated. Is the proposed major source or major modification within 100 km of a Class I area (or beyond 100 km, but of such size that it may affect a Class I area)?

9 No - Usually, no further review required.

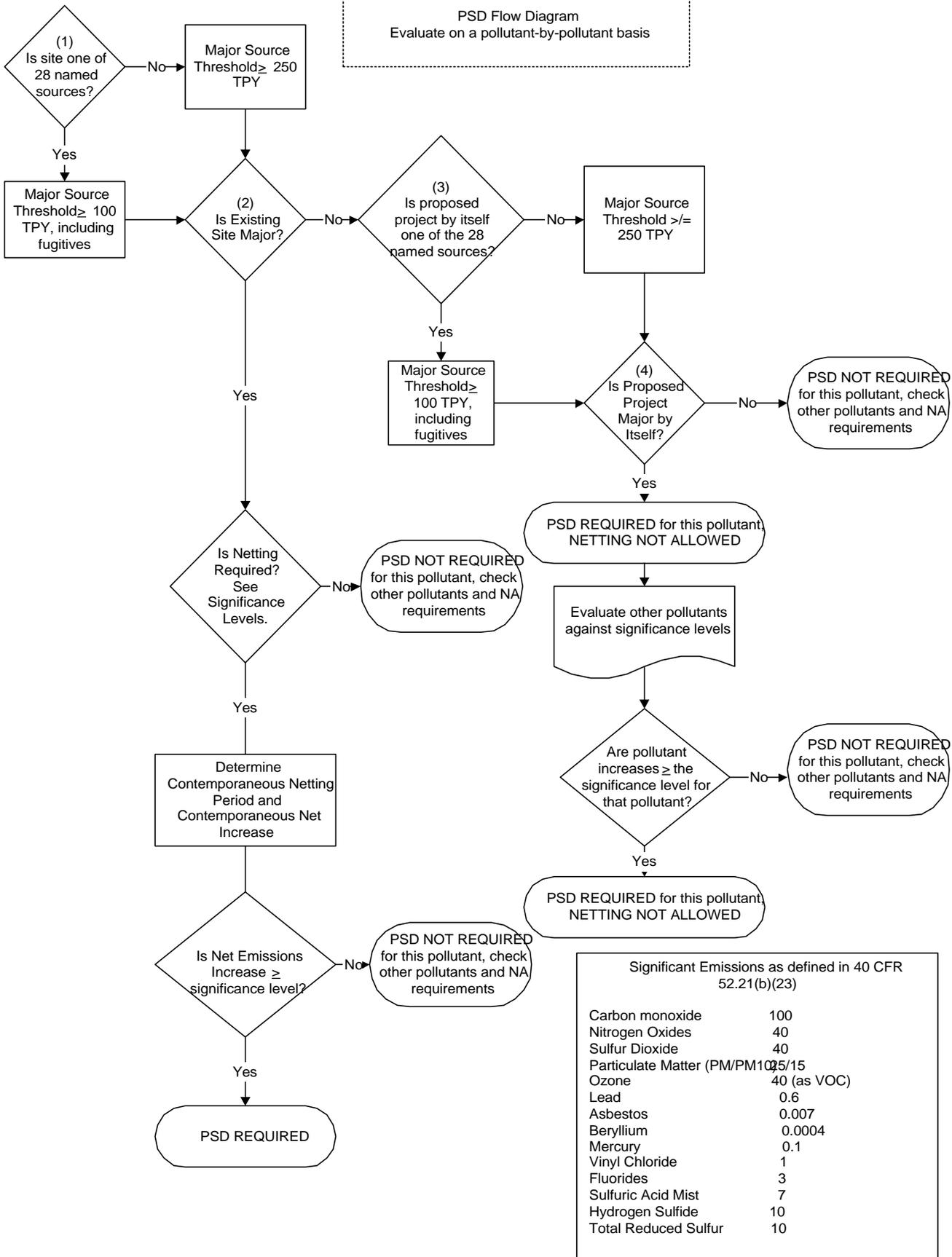
9 Yes - Provide written notification of any such proposed source to the Federal Land Manager (Forest Service, National Park Service, or Fish and Wildlife Service, as applicable).

- STEP 2:** For each applicable Class I area determine if the source may increase the ambient concentration of any pollutant by $1 \mu\text{g}/\text{m}^3$ (24-hour average).
- STEP 3:** Perform all necessary Class I increment analyses (including any necessary cumulative impact analyses) when a significant ambient impact is predicted.
- STEP 4:** Provide the information necessary to conduct the air quality-related values (AQRV) impact. AQRV's are special attributes of a Class I area that deterioration of air quality may affect. Contact the Federal Land Manager to determine the AQRV's of the specific Class I area affected by the proposed project.
- STEP 5:** If required, perform any monitoring or visibility impact analysis within the Class I area.

APPENDIX

FIGURE 1	PSD Flow Diagram
FIGURE 2	Map of Designated Nonattainment Areas in Texas.
TABLE A	PSD Source Categories with 100 tpy Major Source Thresholds
TABLE B	Significant Emission Rates of Pollutants
TABLE C	National Ambient Air Quality Standards (NAAQS) and Significance Levels
TABLE D	Mandatory Class I Areas in Texas and Surrounding States
TABLE E	New Source Performance Standards (40 CFR Part 60) Proposed Prior to August 7, 1980
TABLE F	National Emission Standards for Hazardous Air Pollutants Promulgated Prior to August 7, 1980
TABLE PSD-1	PSD Air Quality Applicability Supplement
TABLE PSD-2	Project Contemporaneous Changes
TABLE PSD-3	Description of Creditable Reductions

PSD Flow Diagram
Evaluate on a pollutant-by-pollutant basis



Significant Emissions as defined in 40 CFR 52.21(b)(23)	
Carbon monoxide	100
Nitrogen Oxides	40
Sulfur Dioxide	40
Particulate Matter (PM/PM10/PM2.5/PM10.5/15)	40
Ozone	40 (as VOC)
Lead	0.6
Asbestos	0.007
Beryllium	0.0004
Mercury	0.1
Vinyl Chloride	1
Fluorides	3
Sulfuric Acid Mist	7
Hydrogen Sulfide	10
Total Reduced Sulfur	10

TABLE A
PSD SOURCE CATEGORIES WITH
100 tpy MAJOR SOURCE THRESHOLDS*

1. Fossil fuel-fired steam electric plants of more than 250 million Btu/hr heat input
2. Coal cleaning plants (with thermal dryers)
3. Kraft pulp mills
4. Portland cement plants
5. Primary zinc smelters
6. Iron and steel mill plants
7. Primary aluminum ore reduction plants
8. Primary copper smelters
9. Municipal incinerators capable of charging more than 250 tons of refuse per day
10. Hydrofluoric acid plants
11. Sulfuric acid plants
12. Nitric acid plants
13. Petroleum refineries
14. Lime plants
15. Phosphate rock processing plants
16. Coke oven batteries
17. Sulfur recovery plants
18. Carbon black plants (furnace process)
19. Primary lead smelters
20. Fuel conversion plants
21. Sintering plants
22. Secondary metal production plants
23. Chemical process plants
24. Fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input
25. Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels
26. Taconite ore processing plants
27. Glass fiber processing plants
28. Charcoal production plans

TABLE B
SIGNIFICANT EMISSION RATES OF POLLUTANTS
REGULATED UNDER THE CLEAN AIR ACT

Pollutants listed in 40 CFR Part 52.21(b)(23)	Emission Rate (tons per year)
Criteria Pollutants¹	
carbon monoxide	100
nitrogen oxides ²	40
sulfur dioxide ³	40
particulate matter (PM/PM ₁₀)	25/15
ozone (volatile organic compounds)	40 (of VOC)
lead	0.6
Noncriteria Pollutants¹	
flourides (excluding hydrogen flouride)	3
sulfuric acid mist	7
hydrogen sulfide	10
total reduced sulfur compounds including hydrogen sulfide	10
municipal waste combustor organics (measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans)	3.5(10 ⁻⁶)

municipal waste combustor metals (measured as particulate matter)

15

municipal waste combustor acid gases (measured as sulfur dioxide
and hydrogen chloride)

40

Other Significant Emissions

Any emissions rate of a pollutant subject to regulation under the Act that is not listed above.⁴

Any emissions rate or net emissions increase associated with a major stationary source or major modification, which would construct within 10 kilometers of a Class I area, and have an impact on such area equal to or greater than 1 $\mu\text{g}/\text{m}^3$ (24-hour average).

¹ Criteria pollutants are pollutants for which a National Ambient Air Quality Standard (NAAQS) exists and noncriteria pollutants are pollutants regulated by the EPA for which no NAAQS exists.

² Nitrogen dioxide is the compound regulated as a criteria pollutant; however, significant emissions are based on the sum of all oxides of nitrogen.

³ Sulfur dioxide is the measured surrogate for the criteria pollutant sulfur oxides. Sulfur oxides have been made subject to regulation explicitly through the proposal of 40 CFR Part 60 Subpart J as of August 17, 1989.

⁴ Ozone depleting substances regulated under Title VI, CFC's 11, 12, 112, 114, 115, halons 1211, 1301, 2402

TABLE C
NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)
AND SIGNIFICANCE LEVELS

Air Contaminant	Averaging Time	NAAQS ($\mu\text{g}/\text{m}^3$)		PSD Monitoring Exemption ($\mu\text{g}/\text{m}^3$)	NAAQS De minimis ¹ ($\mu\text{g}/\text{m}^3$)	PSD Increment ($\mu\text{g}/\text{m}^3$)		
		Primary	Secondary			Class I	Class II	Class III
CO	1-hour	40,000	40,000		2,000			
	8-hour	10,000	10,000	575	500			
NO ₂	annual	100	100	14	1	2.5	25	50
SO ₂	3-hour		1300		25	25	512	700
	24-hour	365		13	5	5	91	182
	annual	80			1	2	20	40
PM ₁₀	24-hour	150	150	10	5	8	30	60
	annual	50	50		1	4	17	34
Ozone	1-hour	235	235	See footnote	See			
Lead	calendar	1.5	1.5	0.1				
Fluorides	24-hour			0.25				
Total reduced	1-hour			10				
hydrogen	1-hour			0.2				
reduced	1-hour			10				

¹ These significance levels do not apply to Class I areas. If a proposed source is located within 100kilometers of a Class I area, an impact of $1 \mu\text{g}/\text{m}^3$ on a 24-hour basis is significant.

² No modeling de minimis air quality level is provided for ozone. However, any net increase of 100 tons per year or more of VOC subject to PSD would be required to perform an ambient impact analysis including the gathering of ambient air quality data.

³ Modeling required for any net increase of 100 tons per year or more of VOC subject to PSD.

**TABLE D
MANDATORY CLASS I AREAS IN TEXAS
AND SURROUNDING STATES**

State	Type/Area	Managing Agency*	State	Type/Area
TEXAS	National Parks			La Garita
	Big Bend			FS
	NPS			Maroon Bells Snowmass
	Guadalupe Mountain			FS
	NPS			Mount Zirkel
				FS
ARKANSAS	National Wilderness			Rawah
Areas				FS
	Caney Creek			Weminuche
	FS			FS
	Upper Buffalo			West Elk
	FS			FS
COLORADO	National Parks			
	Mesa Verde			
	NPS			
	Rocky Mountain			
	NPS			
	National Wilderness Areas			
	Black Canyon			
	NPS			
	Eagles Nest			
	FS			
	Flat Tops			
	FS			
	Great Sand Dunes			
	NPS			

**LOUISIANA National Wilderness
Areas**

Breton
FWS

NEW MEXICO National Parks
Carlsbad Caverns
NPS

National Wilderness Areas

Bandelier
NPS
Bosque del Apache
FWS
Gila
FS
Pecos
FS
Salt Creek
FWS
San Pedro Parks
FS
Wheeler Peak
FS
White Mountain
FS

**OKLAHOMA National Wilderness
Areas**

Wichita Mountains
FWS

* NPS-National Park Service (U.S. Department of the Interior)
FS-Forest Service (U.S. Department of Agriculture)
FWS-Fish and Wildlife Service (U.S. Department of the Interior)

TABLE E
NEW SOURCE PERFORMANCE STANDARDS (40 CFR Part 60)
PROPOSED PRIOR TO AUGUST 7, 1980

Source	Subpart	Affected Facility	Proposed Date
Fossil-fuel fired steam generators for which	D	Utility and industrial (coal, oil, gas, wood, lignite)	08/17/71
Electric utility steam generating units for	Da	Utility boilers (solid, liquid, and gaseous fuels)	09/19/78
Municipal incinerators (\$ 50 tons/day)	E	Incinerators	08/17/71
Portland cement plants	F	Kiln, clinker cooler	08/17/71
Nitric acid plants	G	Process equipment	08/17/71
Sulfuric acid plants	H	Process equipment	08/17/71
Asphalt concrete plants	I	Process equipment	06/11/73
Petroleum refineries	J	Fuel gas combustion devices, Claus sulfur recovery	06/11/73
Storage vessels for petroleum liquids	K	Gasoline, crude oil, and distillate storage tanks	06/11/73
Storage vessels for petroleum liquids	Ka	Gasoline, crude oil, and distillate storage tanks	05/18/78
Secondary lead smelters and refineries	L	Blast and reverberatory furnaces, pot furnaces	06/11/73
Secondary brass and bronze ingot	M	Reverberatory and electric furnaces and blast	06/11/73
Iron and steel mills	N	Basic oxygen process furnaces	06/11/73
Sewage treatment plants	O	Sludge incinerators	06/11/73
Primary copper smelters	P	Roaster, smelting furnace, converter dryers	10/16/74
Primary zinc smelters	Q	Roaster sintering machine	10/16/74
Primary lead smelters	R	Sintering machine, electric smelting furnace,	10/16/74

TABLE F
NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR
POLLUTANTS PROMULGATED PRIOR TO AUGUST 7, 1980

Pollutant	Subpart	Affected Facility	Promulgated Date
Beryllium	C	Extraction plants, ceramic plants, foundries, incinerators, propellant plants, machining operations	04/06/73
Beryllium rocket motor firing	D	Rocket motor firing	04/06/73
Mercury	E	Ore processing, chloralkali manufacturing, sludge incinerators	04/06/73
Vinyl chloride	F	Ethylene dichloride manufacture via O ₂ HCl, vinyl chloride manufacture, polyvinyl chloride manufacture	10/21/76
Asbestos	M	Asbestos mills; roadway surfacing (asbestos tailings); demolition; spraying, fabrication, waste disposal and insulating Manufacture of shotgun shells, renovation, fabrication, asphalt concrete, products containing asbestos	04/06/73 06/19/78

TABLE E-1
NEW SOURCE PERFORMANCE STANDARDS (40 CFR Part 60)
PROPOSED PRIOR TO AUGUST 7, 1980

Source	Subpart	Affected Facility	Proposed Date
Primary aluminum reduction plants Primary aluminum reduction plants 111(d)	S	Pot lines and anode bake plants Pot lines and anode bake plants	10/23/74 04/11/79
Phosphate fertilizer industry	T U V W X	Wet process phosphoric Superphosphoric acid Diammonium phosphate Triple superphosphate products Granular triple superphosphate products	10/22/74
Coal preparation plants	Y	Air tables and thermal dryers	10/24/74
Ferroalloy production facilities	Z	Specific furnaces	10/21/74
Steel plants: electric arc furnaces	AA	Electric arc furnaces	10/21/74
Kraft pulp mills	BB	Digesters, lime kiln, recovery furnace, washer, evaporator, strippers, smelt and BLO tanks Recovery furnace, lime, kiln, smelt tank	09/24/76
Glass manufacturing plants	CC	Glass melting furnace	06/15/79
Grain elevators	DD	Truck, barge or ship, and railcar loading and unloading stations, and grain handling operations	01/13/77
Stationary gas turbines	GG	Each gas turbine	10/03/77
Lime manufacturing plants	HH	Rotary kiln, hydrator	05/03/77
Degreasers (organic solvent cleaners)	JJ	Cold cleaner, vapor degreaser, conveyORIZED degreaser	06/11/80
Lead acid battery manufacturing plants	KK	Lead oxide production grid casting, paste mixing, three-process operation and lead reclamation	01/14/80
Automobile and light-duty truck surface coating operations	MM	Prime, guide coat, and top coat operations at assembly plants	10/05/79
Phosphate rock plants	NN	Grinding, drying, and calcining facilities	09/21/79
Ammonium sulfate manufacture	PP	Ammonium sulfate dryer	02/04/80