

**Amendments to the Air Quality Standard Permit for Concrete Batch Plants
Texas Commission on Environmental Quality**

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I. Executive Summary

In accordance with 30 Texas Administrative Code (TAC) §116.605, Standard Permit Amendment and Revocation, the Texas Commission on Environmental Quality (TCEQ or commission) issues amendments to the air quality standard permit for concrete batch plants. The commission has performed an updated air quality analysis (AQA) in support of the concrete batch plant standard permit to address public concern about potential health impacts from concrete batch plants registered under the standard permit. The adopted revisions to the standard permit are a result of the updated AQA, ensure that Best Available Control Technology (BACT) is being utilized, and reflect updated operating requirements.

The amendments to the standard permit will be effective for standard permits issued on or after January 24, 2024. These amendments include the addition of definitions, revisions to operational and setback requirements, improved best management practices, additional recordkeeping, and other minor corrections or edits. The commission is adopting new and revised definitions of certain terms to prevent confusion and to improve the readability and enforceability of the standard permit.

II. Explanation and Background of Amendments to Air Quality Standard Permit

The commission is issuing amendments to the air quality standard permit for concrete batch plants under the authority of the Texas Clean Air Act (TCAA), Texas Health and Safety Code (THSC), §382.05195, Standard Permit, and 30 TAC Chapter 116, Subchapter F, Standard Permits. As part of the development of standard permits, an AQA, or protectiveness review, is statutorily required to confirm that air permits are protective of human health and the environment; however, routine updates to the protectiveness review are not specifically required or mandated by statute or regulation. The commission voluntarily conducted an updated protectiveness review based on several factors including the length of time since the last review and increasing public comments and concerns associated with the protectiveness of concrete batch plant permits, including crystalline silica emissions.

III. Overview of Amendments to Air Quality Standard Permit

The revised standard permit will authorize new and existing temporary, permanent, and specialty concrete batch plants. The amendments to the standard permit update the operational requirements, setback distances, and other provisions of the standard permit established with the updated protectiveness review that was conducted. The updated protectiveness review considered representative background concentrations of pollutants authorized by the standard permit throughout the state. Updated operational requirements include a maximum annual production limit of 650,000 cubic yards (yd³) per year for all temporary and permanent plants and a reduction in the maximum hourly production limits for truck mix plants. In addition, operational requirements for specialty plants were updated to include a maximum annual production limit of 131,400 yd³ per year with a setback distance of 100 feet and a maximum annual production limit of 262,800 yd³ per year with a setback distance of 200 feet from the batch mixer feed exhaust to any property line. The amendments also include increased setback distances for some areas of the state, options for additional controls, and updated best management practices and recordkeeping requirements.

While this standard permit authorizes concrete batch plants, it is not intended to authorize all possible operating scenarios. Those facilities that cannot meet the standard permit may apply for a case-by-case new source review air permit.

IV. Permit Condition Analysis and Justification

The following demonstrates how each section of this standard permit is enforceable and how the commission can adequately monitor compliance with the permit conditions.

Applicability

Section (1) of the standard permit outlines applicability for use of the standard permit. Subsection (A) is amended to clarify the intent of the requirements and account for the reorganization and renumbering of portions of the standard permit.

Definitions

Section (2) of the standard permit contains definitions for use in the standard permit. Subsection (A) is amended to update the existing definition of "auxiliary tank" to include the word "storage" to be consistent with the definition throughout the standard permit. Subsection (D) is amended to add a definition of "central mix plant" to help clarify specific operating requirements for those types of facilities. Subsection (E) is amended to include a reference to equivalent barriers regarding dust-suppressing fencing.

Subsection (I) is amended to add a definition of "setback distance," which means the minimum distance required from the nearest suction shroud fabric/cartridge filter exhaust (truck mix plant), drum feed fabric/cartridge filter exhaust (central mix plant), batch mixer feed exhaust (specialty plant), cement/fly ash storage silos, and/or engine to any property line. The setback distance for a truck mix plant will be based on the minimum distance from the nearest suction shroud fabric/cartridge filter exhaust to any property line. Setback distance for a central mix plant will be based on the drum feed fabric/cartridge filter exhaust. The setback distance for a specialty concrete plant will be based on the batch mixer feed exhaust. For any plant type, cement/fly ash storage silos and/or engines must also be considered when determining the setback distance.

Subsection (K), the definition of specialty concrete batch plants, is amended to increase the maximum production rate from 30 yd³ per hour to 60 yd³ per hour to account for updates in the specialty concrete batch plant requirements.

Subsection (O) adds a definition of "truck mix plant" to help clarify specific operating requirements for those types of facilities.

To account for the addition of the definitions of central mix plant, setback distance, and truck mix plant, some existing definitions in Section (2) have been renumbered as subsections (E) through (N).

Administrative Requirements

The commission adopts additional recordkeeping requirements, minor word usage changes, grammar edits, and reference updates to clarify the intent of Section (3), subsections (A), (G), and paragraphs (J)(iii), (iv), (viii), and (xii).

Subsection (A) is amended to include the requirement for owners/operators to submit the PI-1S-CBP form when applying to register under this standard permit. A minor change to subsection (G) is adopted to update a cross-reference that is affected by the reorganization of the standard permit.

Paragraph (J)(iii) is amended to require owners/operators of both temporary and permanent concrete plants to keep records of hourly and annual production operations to demonstrate compliance with the standard permit. Paragraph J(iv) is amended to add a requirement for owners or operators to keep records of other dust suppression controls along with records of all repairs and maintenance of abatement systems. The requirement for records of daily operations has been removed since there is no longer a daily production limit requirement in the standard permit. Paragraph (J)(viii) is amended to include monthly testing for silo warning devices or shut-off systems. In addition, new paragraph (J)(xii) is adopted to add a requirement for owners or operators to demonstrate compliance with adopted subsection (5)(L), which requires all sand and aggregate be washed prior to delivery to the site. Demonstration of compliance with subsection (5)(L) can be done in a variety of ways, including but not limited to a sieve analysis or aggregate delivery truck records.

General Requirements

The commission adopts minor word usage changes, grammatical edits, and reference updates in Section (5), subsections (A), (B), (C), (D), (E), (F), (H), (I), and (J).

An amendment to paragraph (D)(iii) adds the word "storage" for clarification and consistency. An amendment to paragraph (E)(iv) adds the word "regularly" to clarify the intent of this provision for cleaning of paved roads and traffic areas. An amendment to subsection (F) adds a new limitation that stockpiles shall be limited to a total of no more than 1.5 acres. As an example, all stockpiles located on site should not collectively be more than 1.5 acres in total area. This requirement was added so that the stockpile area authorized by the standard permit is consistent with the stockpile size that was used for the protectiveness review.

Amendments to subsection (J) include the addition of a requirement that owners or operators comply with specific setback limits specified in Sections (8) or (9) of this standard permit when operating multiple concrete batch plants on the same site. Plants are currently required to comply with the appropriate site production limits in Sections (8) or (9). The amendments to subsection (J) also remove the current language restricting engine operations, which has been relocated to new subsection (6)(F). The current standard permit limits owners/operators of sites that operate more than one concrete batch plant to comply with site production limits because the standard permit does not prevent multiple concrete batch operations at a single site.

Amended subsection (L) requires all sand and aggregate to be washed prior to delivery to the site. The emission calculations used in the development of the standard permit account for washed sand and aggregate; therefore, the requirement for washed material was added to the standard permit to ensure that the emission characteristics of the material being processed are consistent with the protectiveness review. Concrete batch plants that provide concrete for the Texas Department of Transportation and other projects where specific standards must be met on aggregate particle sizes are required to use washed aggregate in concrete mixtures. Washing the aggregate removes most of the smaller particles (fines) of silt and clay. This requirement is also consistent with the authorization for concrete batch plants permitted under a case-by-case permit. The requirements of current subsection (L), relating to registration, amendments, public notice, and hearings, have been renumbered as subsection (M), with minor changes to certain references.

Adopted subsection (N) requires that the owner or operator of any concrete batch plant authorized by this standard permit comply with commission rule 30 TAC § 101.4, Nuisance. This rule states that no person shall discharge from any source whatsoever one or more air contaminants or combinations thereof, in such concentration and of such duration as are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property. This requirement has been added to the standard permit as a reminder to owners and operators that concrete batch plant operations must not cause a nuisance. However, this is not a new requirement, as this rule applies to concrete batch plants regardless of whether it is specifically stated or referenced in this standard permit.

Engines

Section (6) authorizes stationary compression ignition internal combustion engines and cites the potentially applicable Code of Federal Regulations (CFRs) for emission requirements. Adopted subsection (E) adds a requirement that emissions from any engine(s) on-site not exceed 2.61 grams per horsepower-hour (g/hp-hour) of nitrogen oxides (NO_x), per manufacturer's specifications, and requires a copy of the manufacturer's specifications be kept at the site. This requirement was added to ensure that emissions from any engine located on-site would meet the 1-hour nitrogen dioxide (NO₂) National Ambient Air Quality Standard (NAAQS). Note that engines may be subject to other, more stringent, emission limitations that must also be met, in addition to the proposed limit of 2.61 g/hp-hour. All engines must be maintained and operated according to the manufacturer's instructions. A requirement from subsection (5)(J) stating that engines being used for electrical power or equipment operations are limited to a site-wide total of 1,000 horsepower (hp) in simultaneous operation and that there is no restriction to engine operations if the engine will be on-site for less than 12 consecutive months has been moved to new subsection (6)(F).

Operational Requirements for Permanent and Temporary Concrete Plants

The commission has amended the standard permit to combine the operating requirements for permanent and temporary plants in amended Section (8), Operational Requirements for Permanent and Temporary Concrete Plants. Amended Section (8) contains some content carried over from existing Sections (8) and (9), combined with additional content to implement the findings of the recently completed protectiveness review. The relocation requirements for temporary plants, which are currently located in subsections (8)(F) and (G), have been moved to new Section (10). Also, the commission adopts amendments throughout Section (8) for minor word usage, grammatical edits, numbering, and reference changes to clarify the intent of the requirements.

Subsection (A) includes updated wording that outlines the maximum hourly production rate, minimum setback distances for the suction shroud fabric/cartridge filter exhaust, (truck mix plant), drum feed fabric/cartridge filter exhaust (central mix plant), cement/fly ash storage silos, and/or engine, and the newly updated production rate and setback distance tables. The site production limit of 6,000 yd³ per day was removed because it is no longer necessary based on the updated protectiveness review.

In addition, amended subsection (A) includes four different production rates and setback tables specific to the type of plant and the plant's location. The current standard permit requires the owner/operator to maintain a minimum buffer distance of 100 feet from any property line and allows hourly site production up to 300 yd³ in any one hour. The updated tables list new production rates and setback distances required depending on the type of plant and where the concrete batch plant is located in the state. Setback distance requirements throughout the state are based on the representative background concentration applied in the updated protectiveness review.

Adopted paragraph (A)(i) requires a single truck mix concrete batch plant to operate under the requirements in subsection (8)(E), which requires truck mix plants to shelter the drop point by an intact three-sided enclosure with a flexible shroud hanging from above the truck, or equivalent dust collection technology that extends below the mixer truck-receiving funnel and comply with the applicable production rate and setback distances found in Table 1 (Production Rates and Setback Distances, single truck mix plant with shrouded mixer truck-receiving funnel). If a single truck mix concrete batch plant is located in Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, or Waller Counties then the hourly production rate is limited to 200 yd³ per hour and the minimum setback distance is 200 feet from any property line. If a single truck mix concrete batch plant is located in Cameron or Hidalgo Counties, then the hourly production is limited to 200 yd³ per hour and the minimum setback distance is 300 feet from any property line. For all other counties with applicable operating scenarios in Table 1, the hourly production rate is limited to 200 yd³ per hour and the minimum setback distance is 100 feet from any property line.

Adopted paragraph (A)(ii) requires that a single truck mix concrete batch plant must comply with the production rate and setback distance found in Table 2 (Production Rates and Setback Distances, single truck mix plant with shrouded mixer truck-receiving funnel enclosure) and operate under the requirements in subsection (8)(E) in addition to the requirements in subsection (8)(F), which requires an owner or operator of a truck mix plant to shelter the truck loading operation with a three-sided solid enclosure or equivalent that extends from the ground level to three feet above the truck-receiving funnel. If an owner/operator chooses to add an enclosure as defined in subsection (8)(F) to a truck mix concrete batch plant located in any area of the state also operating under the requirements in subsection (8)(E), the hourly production rate is limited to 200 yd³ per hour and the minimum setback distance is 100 feet from any property line.

Adopted paragraph (A)(iii) requires multiple truck mix concrete batch plants operating at the same site to comply with the production rate and setback distances found in Table 3 (Production Rates and Setback Distances, multiple truck mix plants at a single site with enclosure) depending on plant location and operate under the requirements in subsections (8)(E) and (8)(F). If multiple truck mix concrete batch plants are located on the same site in Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, or Waller Counties then the hourly production rate (total for all plants) is limited to 300 yd³ per hour and the minimum setback distance is 200 feet from any property line. If multiple truck mix concrete batch plants are located on the same site in Cameron or Hidalgo Counties, then the hourly production (total for all plants at the site) is limited to 300 yd³ per hour and the minimum setback distance is 200 feet from any property line. For all other counties with applicable operating scenarios in Table 3, the hourly production rate (total of all truck mix plants) is limited to 300 yd³ per hour and the minimum setback distance is 100 feet from any property line.

Adopted paragraph (A)(iv) requires all central mix plants to comply with the production rate and setback distances found in Table 4 (Production Rates and Setback Distances, central mix plants) depending on plant location. Central mix plants are not required to operate under the requirements in subsections (8)(E) and (8)(F). Central mix plants are designed differently from truck mix plants. The aggregate, sand, cement, supplement, and water are mixed in the drum mixer so that the concrete is wet when loaded into trucks. Therefore, fugitive truck loading emissions are not present. For a central mix concrete batch plant located in Cameron or Hidalgo Counties, the hourly production is limited to 300 yd³ per hour and the minimum setback distance is 200 feet from any property line. For all other counties with applicable operating scenarios in Table 4, the hourly production rate for central mix concrete batch plants is limited to 300 yd³ per hour and the minimum setback distance is 100 feet from any property line.

Adopted subsection (B) was updated to apply only to temporary plants due to the reorganization of the standard permit to create this section for both permanent and temporary plants.

Adopted subsection (C) includes a new requirement limiting an owner/operator to a maximum production rate of no more than 650,000 yd³ per year in any rolling 12-month period. An annual production cap was added to ensure that concrete batch plants operating under the standard permit do not cause or contribute to an exceedance of the annual particulate matter of 2.5 microns or less (PM_{2.5}) NAAQS with the addition of background concentration in the protectiveness review.

Adopted subsection (D) adds a requirement to install and properly maintain a suction shroud at the truck mix batch drop point or a total enclosure of the central mix drum feed exhaust, and to vent the captured emissions to a fabric/cartridge filter.

Adopted subsection (E) includes additional language for truck mix plants to shelter the drop point by an intact three-sided enclosure and to add a flexible curtain that hangs from above the truck, or equivalent dust collection technology that extends below the mixer truck-receiving funnel. The addition of the flexible curtain hanging from above the truck was added for improved capture efficiency at the suction shroud.

Adopted subsection (F) includes language for the partial enclosure requirement for truck mix plants mentioned in the production and setback distance tables in paragraphs (8)(A)(ii) and (iii). The partial enclosure can be used by owners/operators to operate with an alternative setback distance as listed in Tables 2 and 3 under paragraphs (A)(ii) and (iii). The adopted language requires the owner/operator of truck mix plants to shelter the truck loading operation with a three-sided solid enclosure or equivalent that extends from the ground level to at least three feet above the truck-receiving funnel. The addition of the partial enclosure option is for additional control to minimize fugitive dust emissions from the truck loading operation. Multiple truck mix plants are required to have the partial enclosure and meet the setback distance and hourly production limits.

Adopted subsection (G) is based on public comment to improve best management practices, reduce the potential generation of nuisance dust, and prevent the tracking of sediment onto adjacent roadways. The adopted language includes requirements to prevent tracking of sediment onto roadways and reduce the generation of dusts by using one or more of the following methods: watering, sweeping, or cleaning the plant road entrances; use of a rumble gate (or equivalent) that is placed at least 50 feet from a public road to dislodge sediment from the wheels and undercarriage of trucks that haul aggregate, cement, and concrete; use of a vacuum truck (or equivalent) to clean the plant road entrances; or use of a tire-wash system (or equivalent) that is installed to remove sediment from the wheels and undercarriage of trucks that haul aggregate, cement, and concrete. This tire wash system shall be located in front of some type of traffic restriction such as a scale, plant gate or a stop sign to encourage its proper use and shall be set back at least 50 feet from the public road. This requirement would not authorize the construction of or use of a truck washing system under Texas Water Code, Chapter 26.

Adopted subsection (H) limits the location of stationary equipment (excluding the suction shroud fabric/cartridge filter exhaust, cement/fly ash silos and engine), stockpiles, and vehicles used for the operation of the concrete batch plant (except for incidental traffic and the entrance and exit to the site) to no closer than 50 feet less than the applicable minimum setback distance listed in subsection (8)(A) from any property line. For example, if the minimum setback distance for a plant is 200 feet, then the stockpile should be located at least 150 feet away from the nearest property line. This change is a result of the updated protectiveness review.

Adopted subsection (I) provides an alternative to the distance requirements of subsection (H) for roads meeting certain requirements. This alternative requires the plant to construct and maintain in good working order dust suppressing fencing or other equivalent barriers to a height of at least 12 feet. Subsection (J) was added to clarify the alternative to the distance requirements of subsection (H) for stockpiles meeting certain requirements. This alternative requires stockpiles to be contained within a three-walled bunker that extends at least two feet above the top of the stockpile.

Adopted subsection (K) is amended to clarify that the requirement for paved roads is intended for the use of permanent plants only. Most of the language in adopted subsection (K) is relocated from existing subsection (9)(F). In addition, minor grammatical changes are adopted.

Additional Requirements for Specialty Concrete Batch Plants

Adopted Section (9) includes requirements for specialty concrete batch plants. The amendments to this section include the relocation of the specialty concrete batch plant requirements from Section (10) to Section (9).

Adopted subsection (A) includes a new requirement limiting an owner/operator of a specialty concrete batch plant to the maximum hourly production rate, maximum annual production rate in any rolling 12-month period, and a minimum setback distance for the batch mixer feed exhaust listed in Table 5 (Hourly and Annual Maximum Production Rates and Minimum Setback Distances, Specialty Concrete Batch Plants). In addition, new Table 5 includes a maximum hourly and annual production rate of 30 yd³ per hour and 131,400 yd³ per year, respectively, in conjunction with a required setback distance of at least 100 feet between the exhaust of the batch mixer feed and any property line. For owners/operators with a maximum hourly production rate more than 30 and less than or equal to 60 yd³ per hour, and an annual production rate of 262,800 yd³ per year, the required setback distance from the exhaust of the batch mixer feed is a minimum of 200 feet from any property line.

Adopted subsection (D) is amended to include a requirement that the owner/operator not operate vehicles used for the operation of the specialty concrete batch plant (except for incidental traffic and the entrance and exit to the site) within a minimum buffer distance of 50 feet less than the applicable setback distance listed in subsection (9)(A) from any property line. The requirement was previously 25 feet from any property line. The changes in the specialty plant requirements are a result of the updated protectiveness review.

Temporary Concrete Plants Relocation Requirements

Adopted Section (10) contains relocation provisions for temporary concrete plants that were previously located in Section (8). The requirements in adopted Section (10) have been updated to include only the conditions required for TCEQ to approve an already permitted plant to relocate. In this amendment, the operational requirements for temporary facilities that were previously included with the relocation requirements were moved to be included in amended Section (8), Operational Requirements for Permanent and Temporary Concrete Plants.

V. Protectiveness Review

TCEQ calculated emission rates for sources at concrete batch plants using emission factors (EF) and historically accepted calculation methodologies. Temporary, permanent, truck and central mix, and specialty plants EFs were based on the composition of concrete from EPA AP-42: "Compilation of Air Pollution Emission Factors" (AP-42) Chapter 11.12 Concrete Batching. Material handling emissions were based on AP-42 Chapter 11.12 Table 11.12-2, and the "Uncontrolled" factor was used. The control efficiency percentages were based on washed material. The PM_{2.5} EF was based on the ratio from the drop point emission factors (k values) found in Aggregate Handling and Storage Piles AP-42 Chapter 13.2.4. Particulate emissions from silo loading were based on a control efficiency of at least 99.5% from the silo baghouse.

Emissions from the central baghouse for truck mix and central mix operations at temporary and permanent plants are calculated using particulate matter (PM) & particulate matter of 10 microns or less (PM₁₀) EFs from AP-42 Chapter 11.12 Table 11.12-2. The EF for PM_{2.5} is in AP-42 Chapter 11.12 Background Document Table 18.6. Nickel emissions calculated for truck mix and central mix operations are based on factors from AP-42 Chapter 11.12 Table 11.12-8. For truck mix operations, particulate emissions from the baghouse stack and fugitive loading emissions are based on a control efficiency of at least 99.5% from the baghouse for PM_{2.5}. A 99% capture efficiency was used for the suction shroud. Requirements in the standard permit were updated to include a flexible curtain in subsection (8)(E) for an owner/operator to achieve a 99% capture efficiency at the suction shroud. To provide for additional operating scenarios, emissions were also calculated using an additional 85% control efficiency. The additional 85% control efficiency is achieved by using an enclosure around the truck loading area which will consist of three sides around the truck loading area extending from the ground level to at least three feet above the truck-receiving funnel. For central mix operations, particulate emissions from the baghouse stack are based on complete capture of emissions and a control efficiency of at least 99.5% from the baghouse for PM_{2.5}. New requirements were added into the standard permit under proposed subsection (8)(F) that includes language for the enclosure requirement mentioned in the production and setback distance tables in subsection (8)(A). The enclosure can be used by owners/operators to operate with an alternative setback distance as listed in Tables 2 and 3 under subsection (8)(A).

PM and PM₁₀ emissions from the weigh hopper vented to a baghouse at temporary and permanent plants are from the equation in AP-42 Chapter 13.2.4 with 10 mph wind speed (from Table 11.12-2 footnote) and a moisture content of 0.25% (minimum moisture content). Nickel emission factors are from AP-42 Chapter 11.12 Table 11.12-8.

Stockpile emissions from permanent, temporary, and specialty plants are based on an EF of a pound of pollutant per acre per day. PM₁₀ is assumed to be 50% of PM. The PM_{2.5}/PM₁₀ ratio is from the Background Document for Revisions to Fine Fraction Ratios Used for AP-42 Fugitive Dust Emission Factors (Chapter 13.2).

Specialty plant annual throughput is based on 12 hours per day and 365 days per year of operation. The mixer and weigh hopper loading emissions were calculated by using an enclosed percent control of 90%. Emissions were calculated using a central mix operation. The EF for PM_{2.5} is located in AP-42 Chapter 11.12 Background Document Table 18.6. EFs for PM and PM₁₀ are from the equation in AP-42 Chapter 13.2.4 with 10 mph wind speed (from Table 11.12-2 footnote) and a moisture content of 0.25% (minimum moisture content). Nickel emission factors are from AP-42 Chapter 11.12 Table 11.12-8.

Crystalline silica emission rates are based on a respirable silica content in cement of 1% and a respirable silica content in fly ash of 7% for an overall percentage of 1.66% using a cement to fly ash ratio of 89 parts of cement to 11 parts of fly ash in concrete. The source of the silica content percentages is from a review of various Safety Data Sheets (SDS) for cement and fly ash.

Engine emissions are based on Tier IV NO_x and PM emission standards in Title 40 Code of Federal Regulations (40 CFR) Part 1039. This is assuming a total maximum of 1,000 hp of combined engines on-site.

The TCEQ performed an AQA in support of the concrete batch plant standard permit protectiveness review. The AQA included dispersion modeling of a model concrete batch plant at multiple maximum hourly production rates: 30 yd³ per hour, 60 yd³ per hour, 100 yd³ per hour, 150 yd³ per hour, 200 yd³ per hour, 250 yd³ per hour, 300 yd³ per hour, and 300 yd³ per hour (central mix). For the 30 yd³ per hour and 60 yd³ per hour maximum hourly production rate cases, the AQA included modeling for an annual production rate of 131,400 yd³ per year and 262,800 yd³ per year, respectively. For all other maximum hourly production rate cases, the AQA included modeling for an annual production rate of 650,000 yd³ per year. The AQA included the following emission generating facilities or activities: material handling operations, truck loading, stockpiles, cement silos, and an internal combustion engine to generate power for equipment at the site. For all production rates, except for the 30 yd³ per hour, 60 yd³ per hour, and 300 yd³ per hour (central mix) cases, the AQA also included modeling for two different control scenarios: partial enclosure of the truck loading activities and no partial enclosure of the truck loading activities. The pollutants evaluated were carbon monoxide (CO), NO₂, sulfur dioxide (SO₂), particulate matter (PM₁₀ and PM_{2.5}), nickel (Ni) particulate, formaldehyde (CHOH), and silica (SiO₂).

The TCEQ performed the modeling using the EPA's ISCST3 (version 02035) model. Modelers have been using the ISC model in permitting for more than 30 years. Developers created the model to be easy to use and to address complex atmospheric processes in a relatively simple way that all users can understand. Developers based the ISCST3 model on the Gaussian distribution equation and it is inherently conservative due to the main simplifying assumptions made in its derivation. These assumptions are:

- Conditions are steady-state (for each hour, emissions, wind speed, and direction are constant) and the dispersion from source to receptor is effectively instantaneous;

- There is no plume history as model calculations in each hour are independent of those in other hours;
- Mass is conserved (no removal due to interaction with terrain, deposition, or chemical transformation) and is reflected at the surface; and
- Plume spread from the centerline follows a normal Gaussian distribution and only vertical and crosswind dispersion occurs. The model ignores dispersion downwind.

The TCEQ applied the model in a screening mode to ensure predictions were conservative and applicable for any location in the state. The rationale for using ISCST3 is that the standard permit has statewide applicability. The ISCST3 model handles surface characteristics simplistically, using either rural or urban dispersion coefficients. Using EPA's refined dispersion model, AERMOD, would have required considering site-specific surface characteristics. Rather than the two choices of surface characteristics for ISCST3, AERMOD would have required dozens to capture a sufficient variation across the state. With dozens of choices of surface characteristics, the reasonable worst-case for all concrete batch plants across the state would be unclear. In addition, the TCEQ used ISCST3 as a screening technique in the context of this protectiveness review since the purpose of such techniques is to eliminate the need for more detailed modeling when those sources clearly will not cause or contribute to ambient concentrations in excess of the NAAQS.

The modeling used a polar receptor grid with 36 radials spaced every 10 degrees from true north. Each radial includes a receptor every 100 feet out to 1000 feet from the center point. The modeling used surface meteorological data from Austin and upper-air meteorological data from Victoria for the years 1983, 1984, 1986, 1987, and 1988. Since the analysis is primarily for short-term concentrations, this five-year data set would include worst-case, short-term meteorological conditions that could occur anywhere in the state. The wind directions were set at 10-degree intervals to coincide with the receptor radials. This would provide predictions along the plume centerline, which provides a conservative result.

The modeling was conducted using both rural and urban dispersion coefficients. The higher concentration of the two options was used as the maximum predicted concentration. The modeling used the flat terrain option since the majority of the emissions are fugitive emissions that would closely follow the terrain. Downwash structures were not included in the modeling since no significant structures would likely exist at these types of sites that would influence dispersion. In addition, downwash is not applicable to area sources. The TCEQ represented emissions from all material handling activities, truck loading, and stockpiles as a series of co-located circular area sources 100 feet in diameter at 5, 10, 15, and 20 feet high. The TCEQ assumed these emissions are well distributed throughout the site; therefore, an area source is appropriate. The modeling included emissions from material handling activities, truck loading, and stockpiles that take place from ground level to about 20 feet in height. The circular area minimizes bias of any one wind direction or source orientation. The modeling represented emissions from baghouses as a single point source 40 feet high with no vertical momentum or buoyancy. The modeling represented emissions from engines as a single point source using the TCEQ's existing data as specified in the description of Section (6) of this standard permit.

With the exception of the annual pollutants associated with the 30 yd³ per hour and 60 yd³ per hour maximum hourly production rate case and annual PM_{2.5} associated with the other maximum hourly production rate cases, maximum hourly emission rates were modeled for the short-term and annual standards and thresholds. For the annual pollutants associated with the 30 yd³ per hour and 60 yd³ per hour maximum hourly production rate case, maximum hourly emission rates were modeled for the internal combustion engine; annual average emission rates, based on 131,400 yd³ per year and 262,800 yd³ per year, respectively, were modeled for all other sources. For annual PM_{2.5} associated with the other maximum hourly production rate cases, maximum hourly emission rates were modeled for the internal combustion engine; annual average emission rates, based on 650,000 yd³ per year, were modeled for all other sources. Modeling was initially conducted using an emission rate of 1 pound per hour (lb/hr) to predict a generic impact for each source. The generic impact was multiplied by the pollutant-specific emission rates to calculate a maximum predicted concentration for each source. The maximum predicted concentrations for each source were added together to get a total predicted concentration for each pollutant for comparison with applicable standards/thresholds.

Generic modeling was initially conducted (results added independent of time and space) as a conservative first step. If the results pass this first step for a given pollutant, the analysis was complete. The modeling was further refined for the remaining pollutants and to consider time and location of predicted high concentrations. Pollutant-specific modeling was performed for the PM₁₀, PM_{2.5}, and 1-hour NO₂ NAAQS demonstrations. The pollutant-specific modeling considered the form of the applicable NAAQS. For all production rates, except for the 30 yd³ per hour case, 60 yd³ per hour, and 300 yd³ per hour (central mix) cases, additional pollutant-specific modeling for PM₁₀ and PM_{2.5} was performed for two different control scenarios: partial enclosure of the truck loading activities and no partial enclosure of the truck loading activities. These additional model runs were performed for just PM₁₀ and PM_{2.5} since these two pollutants are associated with the minimum setback distances.

The TCEQ evaluated NO₂ using a NO₂/NO_x ratio of 0.5. The EPA's March 1, 2011, guidance memo states, "Although well-documented data on in-stack NO₂/NO_x ratios is still limited for many source categories, we also feel that it would be appropriate in the absence of such source-specific in-stack data to adopt a default in-stack ratio of 0.5 as being adequately conservative in most cases and a better alternative to use than the Tier 1 full conversion." Since the maximum concentration location tends to be within 200 feet of the source and travel time of the emissions would be relatively short, there would not be sufficient time for the NO_x to NO₂ conversion to take place. Therefore, an in-stack ratio of 0.5 is reasonable for this analysis.

The predicted concentrations for criteria pollutants were initially compared to de minimis levels. The predicted concentrations for CO and SO₂ were less than the de minimis levels at all distances. For criteria pollutants with predicted concentrations greater than de minimis levels (NO₂, PM₁₀, and PM_{2.5}), a cumulative analysis of each air pollutant was conducted by adding background concentrations to the model predicted concentrations for comparison with the applicable NAAQS. The results of the cumulative analysis were used to establish minimum setback distances. The predicted concentrations of SO₂ were less than the state property line standard at all distances. The predicted concentrations of Ni, CHOH, and SiO₂ were less than their effects screening levels (ESLs) at all distances. The results of the review for all pollutants show that the standard permit is protective. The modeling report is available upon request.

VI. Public Notice and Comment Period

In accordance with 30 TAC §116.605, Standard Permit Amendment and Revocation, the TCEQ published notice of the proposed amended standard permit in the *Texas Register* and newspapers of the largest general circulation in the following metropolitan areas: Austin, Houston, Dallas, and San Antonio. The dates of the English-language publications were April 13, 2023, in the *San Antonio Express-News*, and April 14, 2023, in the *Austin-American Statesman*, *Dallas Morning News*, *Houston Chronicle*, and the *Texas Register*. The dates of the Spanish-language newspaper publications (*El Mundo Austin*, *La Prensa de Houston*, *Al Dia Dallas*, and *El Mundo San Antonio*) were April 14, 16, 19, and 20, 2023, respectively. The public comment period ran from the date of publication until midnight on June 14, 2023. Written and oral comments were received.

After the public comment period, TCEQ revised the proposed amended standard permit. The amended standard permit was considered by the commission for adoption. Upon adoption of the standard permit by the commission, the amended standard permit and a response to all comments received is available on the TCEQ's website.

VII. Public Meeting

The commission held a public meeting on the proposed amendments in Austin on Thursday, May 18, 2023. Persons who attended the meeting in person provided oral comments for approximately one hour. The commission also held an informational meeting in Houston on May 22, 2023, during the public comment period to answer questions about the proposed amendments. Oral testimony was not accepted at the informational meeting. Interpreters fluent in Spanish were available at both the public meeting in Austin and the informational meeting in Houston.

VIII. Analysis of Comments

The commission received comments from Senator Borris Miles (Texas Senate District 13), Kathryn Bazan, Sydney Beckner (Texans for Responsible Aggregate Mining [TRAM] on behalf of Air Alliance Houston, Public Citizen, Environmental Defense Fund, the Sierra Club Lone Star Chapter, and Environment Texas), Paula Blackmon (City of Dallas), Lynda Buckley, Neil Carman (Sierra Club Lone Star Chapter [SCLSC]), Deb Davis, Carol Dejean (on behalf of DyerForest Heights Civic Club [DHCC]), Amy Dinn (Lone Star Legal Aid [LSLA] on behalf of Super Neighborhood 48 Trinity/ Houston Gardens, Progressive Fifth Ward Community Association, and Dyersforest Heights Civic Club), Emily Erickson, Laura Foreman, Josh Leftwich (on behalf of the Texas Aggregates and Concrete Association [TACA]), Christian Menefee (on behalf of Harris County Attorney's Office [Harris County]), Mark Miller, Travis Mross (on behalf of Zachry Construction Corporation [ZCC]), Amanda Nathan, Letitia Plummer (City of Houston), Jeff Robinson (on behalf of United States Environmental Protection Agency Region 6 [EPA]), Christina Schwerdtfeger, Adrian Shelley (on behalf of Public Citizen), Patrick Tarlton (on behalf of the Texas Concrete Pipe Association [TCPA]), Tracy Wallace, Odie Waters, Stephen Williams (on behalf of the City of Houston Health Department [CHHD]), Jennifer Woodard (on behalf of the Associated General Contractors of Texas [AGC]), Nikolaos Ziropiannis (on behalf of himself, Alex Hollingsworth, and David Konisky of Indiana University), and one anonymous individual.

Some similar or overlapping comments have been listed or grouped together to facilitate a collective response. All comments were reviewed, however a number of comments included statements or opinions which were outside the scope of these amendments to the Air Quality Standard Permit for Concrete Batch Plants (CBPSP), and TCEQ is not addressing those comments within this response to comments.

A. Health, Air Quality, and Protectiveness Review

COMMENT 1:

AGC and LSLA expressed support for TCEQ conducting a new air quality analysis (AQA) and protectiveness review of the CBPSP. AGC stated that the new AQA will increase the confidence of the general public that the standard permit is protective of human health and the environment, and the revised standard permit will also give operators regulatory certainty and an appropriate authorization mechanism for these minor sources. LSLA stated that it was a good step that multiple plant facilities were being incorporated as part of the protectiveness of the proposed amended permit.

RESPONSE

The commission appreciates the support and agrees that the amended standard permit will ensure protection of human health and the environment while providing an appropriate and efficient authorization mechanism for these types of facilities.

COMMENT 2:

DHCC and three individuals expressed concern about the effects of concrete plants on human health, air quality, and the environment. Residents stated they are experiencing coughing, asthma, need for medication or oxygen breathing devices, congested heart troubles, etc. from particulate matter (PM), especially during windy days or storms.

The City of Dallas stated that batch plants significantly impact the air quality and health of communities. The commenter stated that concrete batch plant (CBP) operations emit fugitive emissions that include several air pollutants, including ozone precursors like nitrogen oxides (NO_x) and volatile organic compounds (VOCs) and other criteria pollutants like particulate matter (PM) less than or equal to 10 microns in aerodynamic diameter (PM₁₀), and PM less than or equal to 2.5 microns in aerodynamic diameter (PM_{2.5}). The commenter noted that CBPs include multiple sources of fugitive emissions, including unloading of aggregate or sand from truck, rail, or barge onto storage piles; movement of aggregate and sand to maintain the shape of storage piles; filling the bucket of the front-end loader for transfer to the hoppers; wind erosion of sand and aggregate storage piles; and movement of delivery trucks, cement trucks and front-end loaders overhaul roads and yard surfaces. The commenter stated that internal plant roadways are also big contributors to the overall level of dust associated with a plant. The commenter stated that pollutants such as PM, VOCs, and ozone may cause significant health effects, including fatigue, nausea, and dizziness; reduced lung function; worsening of medical conditions like asthma and heart disease; and increased mortality from lung cancer and heart disease.

Nikolaos Ziropiannis stated that the uncertainty about the emissions and impacts of CBPs calls into question the AQA conducted by TCEQ to support the 2023 amendments. The commenter stated that the AQA relied on modeling estimates that fail to account for the actual implications of batch plant operations. The commenter also stated that the AQA was based on a single PM₁₀ and PM_{2.5} air quality monitor for each TCEQ region, failing to capture geographically granular ambient pollution effects. The commenter stated that they used the Estimation of Air Pollution Social Impact Using Regression model and the model predicted two premature mortalities a year using direct emissions of PM_{2.5} from CBPs in Harris County, amounting to \$29 million in annual health damages.

RESPONSE

During the initial development and this amendment of the CBPSP, the executive director conducted an extensive protectiveness review to ensure the protection of human health and the environment. The protectiveness review compared predicted concentrations associated with emissions allowed by the standard permit with applicable state and federal health-based standards and guidelines. These standards and guidelines include the National Ambient Air Quality Standards (NAAQS), TCEQ Effects Screening Levels (ESLs), and TCEQ rules. As described in detail below, the executive director determined that the emissions authorized by the standard permit are protective of both human health and welfare and the environment.

The EPA created and continues to evaluate the NAAQS, which include both primary and secondary standards, for pollutants considered harmful to public health and the environment. Primary standards protect public health, including sensitive members of the population such as children, the elderly, and those individuals with preexisting health conditions. Secondary NAAQS protect public welfare and the environment, including animals, crops, vegetation, visibility, and buildings, from any known or anticipated adverse effects from air contaminants. The EPA has set NAAQS for six criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), sulfur dioxide (SO₂), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM₁₀), and PM less than or equal to 2.5 microns in aerodynamic diameter (PM_{2.5}). The standard permit is designed to ensure that authorized emissions will not cause or contribute to an exceedance of a NAAQS and are protective at and beyond an authorized facility's property line.

Concrete batch plants are considered minor sources of emissions with a typical concrete batch plant estimated to emit less than 2 tons per year (tpy) of PM_{2.5}. The protectiveness review considered the predicted concentrations and potential health effects of CO, NO₂, SO₂, PM₁₀, PM_{2.5}, nickel (Ni) particulate, formaldehyde (CHOH), and silica (SiO₂). The emission-generating facilities or activities included in the protectiveness review are material handling operations, truck loading, stockpiles, cement silos, and an internal combustion engine to generate power for equipment at the site. The predicted concentrations for criteria pollutants were initially compared to de minimis levels. The predicted concentrations for CO and SO₂ were less than the de minimis levels at all distances. For criteria pollutants with predicted concentrations greater than de minimis levels (NO₂, PM₁₀, and PM_{2.5}), background concentrations were added to the predicted concentrations for comparison with the NAAQS. The predicted concentrations of SO₂ were less than the state property line standard listed at 30 TAC §112.3 at all distances. The predicted concentrations of Ni, CHOH, and SiO₂ were less than their effects screening levels (ESLs) at all distances. Ozone is not a pollutant that is directly emitted. However, ozone pre-cursor emissions of NO_x and VOC are emitted from internal combustion engines that may be used at concrete batch plants. Given the magnitude of the ozone pre-cursor emissions from the internal combustion engine, ozone impacts are predicted to be insignificant based on EPA's Modeled Emission Rates for Precursors (MERPs) tool. TCEQ's protectiveness review demonstrated that predicted concentrations of the pollutants identified above would not exceed applicable NAAQS or TCEQ ESLs under the operating conditions and setback distances of the standard permit.

The CBPSP requires substantial dust control processes to minimize dust emissions, including (but not limited to) paving in-plant roads and work areas, using water sprays on stockpiles, and using a suction shroud and three-sided curtain to prevent flyaway dust. The generation of dust should be mitigated so that it does not significantly impact visibility. While nuisance conditions are not expected if the facility is operated in compliance with the terms of the permit, operators must also comply with commission rule 30 TAC §101.4, which prohibits emissions which cause nuisance conditions.

Additional information about the protectiveness review that was conducted for these amendments is available in Section V above.

COMMENT 3:

The CHHD stated that the City of Houston supports TCEQ's efforts to further ensure that air quality and human health are protected. The commenter stated that they believe that the additional setbacks, limitations on production, and updated best management practices will help to serve that purpose. The commenter stated that they are encouraged by these changes but would like more details on how they will be regulated. The commenter also stated that the AQA is a process that encompasses multiple undertakings, they believe the public would benefit from the creation of a comprehensive document.

RESPONSE

The commission appreciates the support. Additional detail regarding the AQA, or protectiveness review, that was conducted as part of this amendment is provided in Section V above, as well as the Modeling Report, which is available on the TCEQ website.

Monitoring and recordkeeping requirements are included in the CBPSP. Operators are required to keep written records on-site for a rolling 24-month period to include production rate for hourly and annual operation to demonstrate compliance. Records must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction. The Regional Office may perform unannounced investigations of the plant. The investigation may include an inspection of the site including all equipment, control devices, monitors, and a review of all required recordkeeping. If the investigation identifies a violation, TCEQ takes appropriate enforcement action to ensure that the violation is corrected.

TCEQ does not have a regulatory-mandated reporting frequency for CBPs. TCEQ's air quality standard permits have typically relied on recordkeeping, rather than reporting, as the primary mechanism for monitoring and documenting compliance with the permit conditions, except in cases where there is a failure of emission control or monitoring equipment or another cause of excess emissions. The use of recordkeeping (as opposed to reporting) to determine compliance with the production limits of the amended standard permit is consistent with the prior CBP standard permit and standard permits for similar sources.

COMMENT 4:

LSLA stated that the current CBPSP is not protective, and TCEQ will not implement the 2023 Amendment expediently enough to ensure its protectiveness. The commenter stated that TCEQ has a court-recognized statutory duty to protect the public's health and physical property while administering the law. The commenter noted Texas Water Code §5.120 and Texas Health and Safety Code (THSC), §382.0518(d). The commenter stated that the Health and Safety Code specifically dictates that TCEQ must deny any requested air permit that does not protect the public's health and physical property. The commenter also noted that THSC §382.0518(b) and 30 TAC §116.111(a)(2) require that a TCEQ air permit protect the public's health and property.

LSLA discussed the protectiveness review process and the lack of an updated protectiveness review for the 2021 amendments. The commenter stated that, while not commenting on the sufficiency of the 2023 Protectiveness Review, the results of the 2023 Protectiveness Review demonstrate that the current CBPSP is not protective for air pollutants of concern in Harris County and other counties. The commenter stated that TCEQ is not currently meeting the standards it must abide by to protect the environment in issuing a standard permit for CBPs. The commenter stated that the current CBPSP does not include or require: (1) partial enclosures for truck loading; (2) setback distances reflected in Table 21 for Region 12; or (3) hourly and annual limits on the production rate, and asserted that if the 2023 Protectiveness Review shows that these constraints are necessary; then, without these constraints, the existing CBPSP is not protective.

LSLA stated that the deficiencies in the 2000 Protectiveness Review raise an adjacent concern, that the 2023 Amendment does not require existing permitted facilities to comply with the standard permit until the later of (i) two years from the effective date or (ii) the date the facility's registration is renewed. (See 2023 amendment subsection (3)(F).) The commenter stated that, under the General Conditions for standard permits, CBPs do not have to renew their permits but every 10 years, and therefore, if the 2023 Amendment is approved in 2024, there are facilities that may not have to comply with the new CBPSP until eight years later. The commenter stated that this wait is too long given that these CBPs are already operating in a manner that is not protective.

LSLA stated that since the current CBP SP is not protective, TCEQ should take immediate action and require earlier adoption of the pollution controls and setbacks in the 2023 amendments to ensure that existing facilities are protective. The commenter suggested that TCEQ modify the language in subsection (3)(F) to read as follows: "(F) Renewals shall comply with this standard permit on the earlier of (i) two years from the effective date; or (ii) the date the facility's registration is renewed." The commenter stated that, given that TCEQ failed to conduct a protectiveness review on this permit for over 21 years and then declined to do a protectiveness analysis despite Commenters' objections in 2021, TCEQ does not have any more discretion under applicable statutory requirements to protect the environment. The commenter stated that the TCEQ knows the permit that these CBPs operate under now is not protective of communities on the fence line in Harris County. The commenter stated that the 2023 amendment as proposed would not require industry to comply until January 10, 2026, at the earliest, and some facilities would not have to comply until their permit was renewed up to 8 years later. The commenter stated that TCEQ cannot postpone the implementation of these needed changes to make this permit protective under the standards and statutory requirements cited by the commenter.

RESPONSE

The executive director disagrees that the current (2021) CBPSP is not protective. The amended standard permit will be administered in accordance with THSC, §382.01595, and 30 TAC §116.605. Applications for new registrations under the standard permit will be required to meet the requirements of the amended standard permit. As is the case with any new or amended rules, there will be a deadline to come into compliance. Existing permit holders will be required to comply with the amended standard permit within two years or at the next renewal, whichever is later, in accordance with 30 TAC §116.605(d).

COMMENT 5:

AGC stated that TCEQ should include relevant information from its extensive discussion of crystalline silica and PM health risks that were part of the response to comment on the amendment to the CBPSP adopted in September 2021.

RESPONSE

TCEQ is uncertain what specific information the commenter is referring to, but as requested TCEQ has included the prior discussion of crystalline silica and PM health risks from the 2021 response to comments in Appendix 1 of this background document. The commission's evaluation of health risks posed by crystalline silica and PM is also discussed in responses to other comments.

COMMENT 6:

AGC stated that TCEQ should summarize the findings described in its report on crystalline silica issued in December 2020, including its agreement that silicosis is a rare, well-documented occupational disease.

RESPONSE

The conclusion of this December 2020 report ("Crystalline Silica: Ambient Air Monitoring and Evaluation of Community Health Impacts Near Aggregate Production Operations") stated: "These data indicate that the contribution of crystalline silica from these facilities to ambient levels of particulate matter and respirable crystalline silica is negligible or minimal and that the levels generally are below the health based AMCVs for crystalline silica developed by the TCEQ." The conclusion also stated: "When compared to TCEQ's AMCVs for crystalline silica, the ambient air concentrations of crystalline silica near APOs are generally not likely to cause acute or chronic adverse health effects and are not associated with silicosis." The full December 2020 report may be downloaded at the following link:

www.tceq.texas.gov/downloads/toxicology/publications/community-health-impacts-as-202.pdf

COMMENT 7:

EPA stated that the protectiveness review was updated to include a state health effects analysis evaluating the modeled impacts of nickel (Ni) particulate, CHOH, and SiO₂ for comparison with their corresponding ESLs. EPA requested that TCEQ clarify if emissions authorized by the CBPSP may contain additional substances found on TCEQ's current ESL list (e.g., fly ash, cement) and if those substances were also included the state health effects analysis as part of the protectiveness review.

An individual stated that it appears that the protectiveness review has omitted consideration of hexavalent chromium, a known carcinogen and toxic air contaminant, which has ESLs that were established by TCEQ in 2014. The commenter expressed concern that the protectiveness review is incomplete and has underestimated the risk associated with toxic air contaminants from CBPs.

TRAM endorsed the recommendation by another commenter (Dr. Christina Schwerdtfeger) to expand the protectiveness review to include hexavalent chromium and requested an additional comment period following those results.

SCLSC stated that TCEQ needs to improve the protectiveness review for CBPs to include toxic chemicals present in virtually all varieties of Portland cement, such as the known human cancer-causing agent, Chromium VI or hexavalent chromium.

RESPONSE

Speciated PM emissions from CBPs (including constituent emissions of cement and fly ash) have been evaluated by TCEQ's Toxicology Division. The Toxicology Division determined that these emissions are not expected to cause adverse health effects. As a result, a health effects review of speciated PM from CBPs is not required, as documented in Appendix B of the TCEQ's Modeling and Effects Review Applicability (MERA) guidance.

However, a health effects review of metals potentially contained in the PM emissions was performed in the protectiveness review. Specifically, nickel particulate emissions were evaluated as a surrogate for potential metal emissions, including hexavalent chromium. Emissions of nickel particulate were chosen to be evaluated due to the combination of the highest emission factor (EF) and lowest short-term (ST) ESL compared to other metals. The emission factors for metal emissions from CBPs are listed in U.S. EPA AP-42 Compilation of Emission Factors (AP-42) Chapter 11.12 Concrete Batching, Table 11.12-8. The predicted concentrations from the air dispersion modeling were evaluated against the ESL for nickel which determined that no adverse health effects are expected. As a result, emissions of other metals are also expected to be protective.

COMMENT 8:

AGC stated that while the primary pollutant of concern with CBP is PM_{2.5}, there are many different forms of PM_{2.5} and the potential health risks from CBP may be conflated with other regulated sources and types of PM_{2.5}. AGC asked that TCEQ address these important differences in emissions and discuss the relative risks of CBPs compared to other sources of PM_{2.5} commonly permitted by TCEQ. AGC stated that TCEQ should discuss CBP's relative contributions to overall emissions and sources regulated by TCEQ.

RESPONSE

Particulate matter is the primary air pollutant emitted from CBPs and it mostly comes from materials used to make concrete (sand, gravel, cement, fly ash) being moved around the site and stored. Some emissions also occur from engines operating at the site. Health effects from exposure to PM are dependent on the size of the particle. Less than 20% of the particles emitted from CBPs are small enough to enter the lower part of the respiratory tract where oxygen enters the blood stream. Those particles, which are less than or equal to 2.5 micrometers (µm) in diameter (PM_{2.5}), are the particles of the greatest toxicological concern. With PM in general, only tiny particles of crystalline silica (called respirable crystalline silica) have the potential to cause health effects in the respiratory tract.

Concrete batch plants are considered minor sources of emissions. A concrete batch plant is authorized by the standard permit to emit less than 2 tons per year of PM_{2.5}. By comparison, other industrial sources account for a majority of particulate matter emissions. For example, the 2020 emissions inventory of Harris County shows that the combined PM_{2.5} emissions from concrete batch plants were only 0.63% of the total reported PM_{2.5} emissions from area sources and 0.05% of all PM sources.

Evidence from ambient air monitoring also shows that dusty PM sources like CBPs do not substantially impact the amount of PM_{2.5} in the air. Although there are few data measuring PM_{2.5} around CBPs specifically, there is monitoring data around sources with far greater potential for PM production such as aggregate production operations (APOs). Similar to CBPs, APOs will have PM emissions from moving and storing sand and gravel, and from other registered facilities that include sources that can produce PM. TCEQ monitoring in the vicinity of APOs in central Texas shows that these facilities do not have a significant impact on measured ambient PM_{2.5} concentrations. This is

consistent with studies in other parts of the country showing a lack of impact of APOs on ambient PM_{2.5} concentrations.

In addition, the updated protectiveness review demonstrated that CBP emissions authorized under the standard permit will not result in concentrations of PM_{2.5} exceeding the health-based federal air quality standards or NAAQS, which are set to protect public health with an adequate margin of safety.

COMMENT 9:

EPA requested that TCEQ provide justification for the control and capture efficiency assumptions in the protectiveness review for flexible curtains and shrouding. The standard permit at subsection (8)(E) requires the use of a flexible curtain at the suction shroud to achieve a 99% capture efficiency. EPA requests that TCEQ provide detailed justification for the assumed capture efficiency.

RESPONSE

In the current CBPSP, the truck loading suction shroud is required to be an intact three-sided curtain, or equivalent dust control technology that extends below the mixer truck-receiving funnel. This design represents the basic design of the suction shroud for truck-mix plants. The capture efficiency of 97.3% used in the emission calculations for the truck loading fugitive emissions is based on the average emissions captured by the suction shroud listed in AP-42 Chapter 11.12 Background Document – June 2006, Table 17.1. Note that two of the truck-mix plants in the emission factor test results listed in the same table had a capture efficiency above 99%. The third truck-mix plant had a capture efficiency of only 93.1% which significantly skewed the average capture efficiency.

The required design of the suction shroud in subsection (8)(E) of the 2023 Amendment to the CBPSP is an intact three-sided enclosure with a flexible shroud hanging from above the truck, or equivalent dust collection technology that extends below the mixer truck-receiving funnel. The assumed capture efficiency is at least 99%. This capture efficiency is based on the required additional flexible shroud hanging from above the truck. The additional flexible shroud is expected to increase the capture efficiency of the suction shroud above the capture efficiency represented in the current standard permit.

An application for a 30 TAC Chapter 116, Subchapter B New Source Review (NSR) Permit for Aurora ReadyMix Concrete, LLC (NSR Permit No. 138224) contained a similar proposed suction shroud design. The percent capture efficiency of the proposed suction shroud design was accepted by the TCEQ, and the permit was issued in March of 2018. The application demonstrated that the design of the shroud would capture 100% of the emissions from the loading of the truck due to the calculated face velocity of the opening compared to the design criteria in EPA Test Method 204 (Permanent (PTE) or Temporary Total Enclosure (TTE) for Determining Capture Efficiency) and the American Conference of Governmental and Industrial Hygienists (ACGIH) publication Industrial Ventilation – A Manual of Recommended Practice. However, a conservative capture efficiency of 99% was included in the emission calculations.

The calculated face velocity for the proposed suction shroud design in subsection (8)(E) of the amended CBPSP would also be considered complete capture of emissions. Therefore, a conservative capture efficiency of 99% used in the emission calculations is appropriate.

COMMENT 10:

EPA stated that the technical background also includes an enclosed percent control for specialty plants of 90%, and asked if TCEQ can verify if this control is applicable to conditions (10)(C)(ii) and (iii) in the standard permit. EPA requested that TCEQ provide the basis for this level of control.

RESPONSE

The control efficiency for PM emissions from specialty concrete batch plants is based on the mixing operation for a specialty plant being enclosed by a building as specified by subsection (9)(C)(iii). The percent control for an operation enclosed in a building has been historically accepted by the TCEQ to be 90% and is derived from the documentation produced from the Coal Handling Emissions Evaluation Roundtable (CHEER) Workshop held at the TNRCC Austin Central Office in May 1995. The CHEER document lists multiple resources of emission factors and controls that are appropriate for various aggregate material handling sources. Specifically, the CHEER document cited as a resource for the control efficiency for a full enclosure or an operation enclosed by a building, a study report entitled "Evaluation of Fugitive Dust Emissions from Mining" PEDCo Environmental, Cincinnati, Ohio, (Prepared for EPA) April 1976. The range of values for a full enclosure or operation enclosed in a building was listed as from 85% to 99% depending on the design. As a result, the TCEQ Rock Crushing Plant – Emission Calculations workbook, which is used as a reference for control factors for sources in the aggregate industries, lists the percent control for a full enclosure or an operation enclosed by a building to conservatively be 90%. Based on the typical building design with minimal openings for a specialty plant, the 90% control efficiency for enclosure is appropriate. Emissions used in the protectiveness review for specialty plant batch mixers are based on the controls in subsection (9)(C)(iii) as the worst-case scenario since use of the controls specified in subsections (9)(C)(i) and (9)(C)(ii) would be expected to result in lower emissions.

COMMENT 11:

EPA questioned the TCEQ's assumption that for stockpile emissions, PM₁₀ is 50% of PM. EPA stated that they could not locate this information in the referenced material (Background Document for Revisions to Fine Fraction Ratios Used for AP-42 Fugitive Dust Emission Factors (Chapter 13.2)). EPA stated that TCEQ needs to identify and provide reference to where such assumptions can be found.

RESPONSE

The assumption that PM₁₀ is 50% of PM is based on the ratio of particle size multipliers (k) for the drop point equation (equation (1) in AP-42 Chapter 13.2.4 (Aggregate Handling and Storage Piles)). The ratio is the k value for PM < 10 μm divided by the k value for PM < 30 μm (0.35 / 0.74) which is approximately 50%. The use of this ratio is consistent with the historical estimation of PM₁₀ emissions from stockpiles.

COMMENT 12:

SCLSC stated that CBPs pose unique dust concerns due to the characteristic small sizes of cement bulk materials, which contribute to challenges in handling and controlling cement fines at all transfer points. SCLSC stated that cement dust itself contains PM material smaller than PM₁₀, and Cement Kiln Dust (CKD), which will end up in the cement products from the ground clinker, contains PM smaller than PM₁₀ as well. SCLSC stated that micron size analysis of cement PM and CKD at some Portland cement plants shows that as much as 40.3% of cement particulates are PM₁₀ or smaller and 7% are PM_{2.5} or smaller. The commenter also stated that small particles are typical with up to 69.99% of fly ash particulates (used in batch mix concrete) are PM₁₀ or smaller and 24.12% are PM_{2.5} or smaller in certain cement products.

RESPONSE

For material handling and stockpile emissions, estimated emissions of PM₁₀ are assumed to be 50% of PM which is based on the ratio of particle size multipliers (k) for the drop point equation (equation (1) in AP-42 Chapter 13.2.4 (Aggregate Handling and Storage Piles)). The ratio is the k value for PM < 10 µm divided by the k value for PM < 30 µm (0.35 / 0.74) which is approximately 50%. Similarly, estimated emissions of PM_{2.5} are 15% of PM₁₀ which is also based on the ratio of particle size multipliers (k) for the drop point equation. The ratio is the k value for PM < 2.5 µm divided by the k value for PM < 10 µm (0.053 / 0.35) which is approximately 15%. The use of these ratios is consistent with the historical estimation of PM₁₀ and PM_{2.5} emissions from material handling and stockpiles in the aggregate industries. Material handling emissions will be reduced by 95% by requiring that all aggregate be washed prior to delivery to the site. Stockpile emissions will also be reduced by 95% by only using washed materials in addition to using water, dust-suppressant chemicals, or covers as necessary to minimize dust emissions.

For silo emissions, the emission factors for PM and PM₁₀ are the uncontrolled factors for cement or cement supplement unloading to elevated storage silo (pneumatic), as applicable, from AP-42 Chapter 11.12, Table 11.12-2. According to these emission factors, PM₁₀ emissions are approximately 64% of PM for cement and 35% of PM for cement supplement, such as fly ash. PM_{2.5} emissions are assumed to be 17.1% of PM₁₀. The value of 17.1% represents the percentage of PM₁₀ that is PM_{2.5} according to the worst-case loading emission factors for a truck mix operation in Table 18.6 of the AP-42 Background Document – June 2006 for Concrete Batching. Silo emissions will be controlled with fabric/cartridge filter systems with at least 99.5% control efficiency.

For truck mix loading emissions, the emission factors for PM and PM₁₀ are the uncontrolled factors for truck loading (truck mix) from AP-42 Chapter 11.12, Table 11.12-2. According to these emission factors, PM₁₀ emissions are approximately 28% of PM emissions. The PM_{2.5} emission factor is from Table 18.6 of the AP-42 Background Document – June 2006 for Concrete Batching and is approximately 17.1% of PM₁₀. Captured truck mix loading emissions using the suction shroud will be controlled with a fabric/cartridge filter system with at least 99.5% control efficiency.

For central mix plant mixer loading emissions, the emission factors for PM and PM₁₀ are the uncontrolled factors for mixer loading (central mix) from AP-42 Chapter 11.12, Table 11.12-2. According to these emission factors, PM₁₀ emissions are approximately 27% of PM emissions. The PM_{2.5} emission factor is from Table 18.6 of the AP-42 Background Document – June 2006 for Concrete Batching and is approximately 12% of PM₁₀. The mixer in central mix plants is totally enclosed with captured emissions vented to a fabric/cartridge filter system with at least 99.5% control efficiency.

The estimated emission rates for all sources were included in the protectiveness review. Predicted impacts showed that the estimated emissions will not cause or contribute to a violation of the NAAQS for PM₁₀ and PM_{2.5}.

COMMENT 13:

Harris County stated that, in the 2023 protectiveness review, TCEQ provided no justification or validation for the control efficiencies used for washed material (95%) in the material handling emission calculations, material stockpile emissions (98.5%), and for the partial enclosure around the truck loading area (85%). Harris County requested that TCEQ provide a technical basis validating the reduction in modeled emissions for these control measures. EPA asked if TCEQ can provide justification for the assumption of 85% control efficiency for the three-sided shrouding enclosure for truck mix operations.

RESPONSE**Washed Materials**

The control efficiency for washed materials is based on supporting documentation included in the Protectiveness Evaluation for Proposed Standard Permit on Concrete Batch Plants – Central Mix, April 2000. The supporting documentation is labeled “Determination of a Control Efficiency for Washed Aggregate.” A summary of the documentation is contained in the following paragraphs.

CBPs that are providing concrete for the Texas Department of Transportation and other projects where specific standards must be met on aggregate (aggregate includes course and fine specifications and crushed concrete) particle sizes are required to use washed aggregate in the concrete mixtures.

Washing the aggregate takes out most of the smaller particles (fines) of silt and clay. A sieve analysis using U.S. Sieve No. 200 (74 microns) on the washed material determines how much of the silt the material still holds. A typical No. 200 sieve analysis on washed material will indicate that less than 1% of the total material tested will pass through this screen, and often the results are less than 0.5% passing through the screen.

Further sieve testing of the same material using a smaller No. 270 sieve size (53 microns) determined that only 0.1% of the washed material is less than 53 microns in diameter.

Sieve tests using smaller than a 53-micron screen size increases the laboratory costs significantly. The determination of the actual amount of total suspended particulate (TSP) or PM₁₀ the material contains would require an electron-microscope evaluation. Based on the sieve test data received from aggregate suppliers, only a very small fraction, if any, of the total material tested would be in the TSP category.

Another control mechanism to be applied to fugitive PM emissions is reducing or removing those particles sizes that fall into the TSP range. Washing the aggregate reduces considerably the quantity of material less than 74 microns in diameter. Although the exact quantity of TSP and smaller particles has not specifically been determined, normally 99% (often more than 99.5%) of the material is greater than 74 microns and does not fall into the TSP category.

Additionally, wet fine aggregate (sand) will agglomerate and cannot be sieved at the No. 200 screen at all. One could expect agglomeration when stockpiles are being sprayed with water and/or when the sand is delivered wet. This clumping of the sand further reduces the opportunity for small particles to become airborne.

Therefore, due to the sieve test data and through observation of the physical properties of wet sand, a control efficiency of 95% is applicable to a facility using washed aggregate. This conservative approach assumes that 5% of the total washed material is in the TSP particle size range, which is considerably higher than the test data indicates. As a result, the percent control of 95% for washed materials has been historically accepted by the TCEQ, and the TCEQ Rock Crushing Plant – Emission Calculations workbook, which is used as a reference for control factors for sources in the aggregate industries, lists the percent control for washed aggregate (sand/gravel) to be 95%.

Material Stockpile Emissions

A CBP that also uses water and/or chemicals to control fugitive dust from the stockpiles will have multiple mechanisms acting together to control the fugitive emissions from the stockpiles. A control efficiency of 70% is given for material sprayed with water and a control efficiency of 95% is given for washed materials. Therefore, there is a combined control efficiency as follows:

$(1-0.70)(1-0.95) = 0.015$, or equating to 98.5% efficiency for the combined effect of washed aggregate and water sprays.

The percent control of 98.5% for washed aggregate (sand/gravel) with water spray has been historically accepted by the TCEQ, and the TCEQ Rock Crushing Plant – Emission Calculations workbook, which is used as a reference for control factors for sources in the aggregate industries, lists the percent control for washed sand/gravel with water spray to be 98.5%.

Partial Enclosure

The percent control for an operation partially enclosed has been historically accepted by the TCEQ to be between 50% to 85% and is derived from the documentation produced from the CHEER Workshop held at the TNRCC Austin Central Office in May 1995. The CHEER document lists multiple resources of emission factors and controls that are appropriate for various aggregate material handling sources. Specifically, the CHEER document cited as a resource for the control efficiency for enclosures, a study report entitled “Evaluation of Fugitive Dust Emissions from Mining” PEDCo Environmental, Cincinnati, Ohio, (Prepared for EPA) April 1976. The range of values for a partial enclosure was listed as from 60% to 85% depending on the design. Other resources listed a control efficiency for partial enclosure as low as 50%. As a result, the TCEQ Rock Crushing Plant – Emission Calculations workbook, which is used as a reference for control factors for sources in the aggregate industries, lists the percent control for partial enclosures to be 50% to 85%. Partial enclosures are considered to be structures consisting of anything from only 2 sides to multiple sides to reduce the emission of fugitive dust. The range of values is due to the number of sides that can be represented for the partial enclosure. Partial enclosures are common in the aggregate industry and are mainly used on conveyor transfer points.

In the case of the standard permit, the partial enclosure in subsection (8)(F) would consist of a three-sided solid enclosure extending from the ground to three feet above the truck-receiving funnel. Due to the design of the truck-mix CBPs, the portion of the plant located above the enclosure, consisting of the weigh hopper, dust collector, and other ancillary equipment would essentially act as a fourth side. Therefore, the high range of the values for a partial enclosure (85%) was chosen for use in the emission calculations for the truck loading area fugitive emissions.

COMMENT 14:

Harris County stated that emissions from truck loading were underestimated in the protectiveness review. The commenter stated that the modeling data files specified truck loading emissions at a loading rate of 84.6 tons per hour (tph). The commenter stated that this only considers the loading of cement and supplement, such as fly ash, into the trucks, and did not include all dry ingredients, including aggregate and sand, that are loaded into the trucks and contribute to the emission of PM₁₀ and PM_{2.5}. The commenter stated these emission rates should be based on the loading of all concrete ingredients, which according to TCEQ's modeling files is 578.6 tph.

RESPONSE

Estimated emissions from truck loading are based on AP-42 Chapter 11.12 Concrete Batching, Table 11.12-2. Specifically, the emission factors used are the uncontrolled factors for the Source (SCC) "Truck loading (truck mix) (3-05-011-10)". The emission factors are referenced with Note g which states: "Reference 9, 10, and 14. The emission factor units are pound of pollutant per ton of cement and cement supplement." As a result, the throughput rate of 84.6 tph used in the truck loading calculations is the sum of the cement and cement supplement hourly throughputs (73.6 tph + 11 tph, respectively). The truck loading emission rates do not include the throughput from aggregate and sand because the AP-42 emission factors used in the emission calculations for truck loading are based only on cement and cement supplement, such as fly ash. This calculation methodology has been used historically by the TCEQ for CBP truck loading emission estimates.

COMMENT 15:

Harris County stated that the Air Quality Standard Permit for Concrete Batch Plants with Enhanced Controls (CBPECSP), issued in 2004, was based on the protectiveness review of the Standard Permit for Concrete Batch Plants issued in 2000. The commenter stated that this protectiveness review failed to account for crystalline silica emissions, background concentrations, cumulative impacts and didn't account for the later updated PM_{2.5} NAAQS. The commenter stated that the historical protectiveness reviews are not protective of human health and cannot be relied upon as the basis for TCEQ to continue to allow plants to operate under the CBPECSP. The commenter requested that TCEQ revoke the CBPECSP under 30 TAC §116.605 or issue a moratorium on new registrations until such time as the TCEQ can update the standard permit in a manner that protects human health.

RESPONSE

While changes to the CBPECSP are outside the scope of this amendment, the executive director acknowledges that the CBPECSP should be evaluated in light of the updated protectiveness review to determine if changes are necessary.

COMMENT 16:

Harris County expressed concern with the presumed content of silica in cement and fly ash in TCEQ's modeling. The commenter stated that it was unclear whether the silica content selected by TCEQ from the "various Safety Data Sheets" (SDS) reflected the maximum potential silica content of cement and fly ash. The commenter stated that the maximum potential silica content should be used to ensure protectiveness.

RESPONSE

The executive director retrieved numerous SDS from the cement and fly ash industry to find a representative and conservative concentration of silica in both cement and fly ash. The concentration of crystalline silica in cement was determined to be 1% and the concentration of crystalline silica in fly ash was determined to be 7%. These percentages were used in the emission calculations to estimate the crystalline silica emissions used in the protectiveness review. Additional conservatism was built into the evaluation by assuming that all of the crystalline silica was in the respirable range of 10 microns and less (short-term) and 4 microns or less (long-term). Cement and supplements are composed of a very wide range of particle sizes, including those which are much larger than what is considered respirable. Therefore, the protectiveness evaluation is highly conservative.

COMMENT 17:

Harris County stated that fugitive silica emissions were underestimated, as those emissions were based on the PM emission rate from truck loading, which was underestimated by nearly a factor of 7. The commenter also stated that TCEQ did not consider silica emissions from any sand handling operations, from stockpiles through multiple subsequent transfers. The commenter stated that sand has a higher concentration of crystalline silica than cement and fly ash, and that no silica emissions were calculated or modeled from sand stockpiles, which clearly have PM emissions.

RESPONSE

Silica emissions from both fine aggregate (sand) and coarse aggregate (gravel) were considered during the amendment to the standard permit. Sand, by definition, refers to a specific size range of particles, none which are considered respirable (less than 10 microns). The sand product used by batch plants is a size-graded, high moisture product which is washed prior to delivery to remove fines such as silt and clay. Trace amounts of fines such as silt and clay can be respirable particles that could include crystalline silica but are not expected to be present in quantifiable amounts. Additionally, the coarse aggregate used by batch plants is even larger in size while also being a washed product with fines removed. While handling can liberate small particles adhering to the surface of the rock material, any fraction of crystalline silica is not considered to be quantifiable given the composition, moisture, and nature of the rock products used in the industry.

TCEQ has reviewed ambient air crystalline silica levels measured near APOs in various locations throughout the United States where data are available. This information is referenced in the “Ambient Monitoring of Particulates Including Crystalline Silica, Near APO Facilities, Interim Report” published by the Toxicology, Risk Assessment, and Research Division of the TCEQ. APOs can produce aggregate products that are used at batch plants. These data indicate that the contribution of crystalline silica from these facilities to ambient levels of PM and respirable crystalline silica is negligible or minimal and that the levels generally are below the health-based air monitoring comparison values (AMCVs) for crystalline silica developed by the TCEQ. TCEQ has also conducted monitoring at APO sites in Texas, including a sand mining operation (where raw materials and overburden could have fine impurities such as silts and clays that could contain respirable crystalline silica). Based on the data that have been collected near APO facilities and at a background site to date, all 24-hr PM₄ (less than 4 microns – the size fraction on which long-term effects analyses are based) crystalline silica measurements are well below the health-based 24-hr AMCV. Therefore, exposure to these monitored concentrations would not be expected to cause adverse health effects. TCEQ has also performed monitoring of crystalline silica levels at APO sites in Texas, one of which included an aggregate operation, a CBP, and an asphalt concrete operation. A background site provided for comparison showed crystalline silica levels that are very similar to the levels measured downwind of two of the three APO facilities in the study. A sand mining facility showed levels slightly higher than background, but still well below health concern levels. The reports summarizing these studies can be found at the following URLs:

www.tceq.texas.gov/downloads/toxicology/publications/community-health-impacts-as-202.pdf

www.tceq.texas.gov/downloads/toxicology/research-projects/interimapo.pdf

Given that APOs handle, crush, screen, and produce exponentially larger amounts of material (including unwashed materials), and based on available monitoring data, do not contribute significantly to background crystalline silica levels, it is not reasonable to expect the handling of washed sand and gravel products at a CBP to be a source of significant or quantifiable amounts of respirable crystalline silica.

COMMENT 18:

Harris County stated that stockpile emission rates were underestimated because TCEQ used an emission rate based on averaging annual emissions across the whole year, instead of using the emission rate that would occur during the highest emitting conditions (when maximum, not average, winds were observed). The commenter stated that the ESL for silica may be exceeded during times of higher wind gusts. AGC requested that TCEQ clearly explain that stockpiles are not major sources of emissions under the standard permit.

RESPONSE

Estimated annual PM emissions from the stockpiles are based on emission factors obtained from the EPA guidance Development of Emission Factors for Fugitive Dust Sources, 1974. The emission factors are in pounds of PM per acre of storage per day. Stockpile acreage is limited to no more than 1.5 acres and assumed to be active 365 days per year to be conservative. The estimated stockpile emissions are reduced by 98.5% due to the aggregate being pre-washed and watered, as required by the standard permit in subsections (5)(F) and (5)(L). Hourly emissions are then estimated from the average of the annual emissions and these average hourly emissions are used in the protectiveness review. Using the average hourly emissions in the protectiveness review for stockpile emissions has consistently been the accepted method by the TCEQ. Due to the requirement that the aggregate materials be pre-washed and watered, the stockpile

emissions are not significant when compared to other sources at a CBP and are not the main driver of the impacts in the AQA.

Crystalline silica emissions from stockpiles are not expected or are unquantifiable. As outlined in the 2020 TCEQ report “Crystalline Silica Ambient Air Monitoring and Evaluation of Community Health Impacts Near Aggregate Production Operations”, monitoring of crystalline silica near facilities producing aggregate materials for CBPs did not measure ambient concentration levels of significance. The report is available at the following link:

www.tceq.texas.gov/downloads/toxicology/publications/community-health-impacts-as-202.pdf

As summarized in the report, “The results of these monitoring studies indicate that the overall contribution of APOs to ambient air concentrations of particulate matter and crystalline silica is minimal or negligible. When compared to TCEQ’s AMCVs for crystalline silica, the concentrations of crystalline silica near APOs are generally not likely to cause chronic adverse health effects and are not associated with silicosis (ATSDR 2019).” Therefore, no adverse health effects from crystalline silica are expected.

COMMENT 19:

LSLA urged TCEQ to limit diesel engine emissions created by CBPs in communities. The commenter noted that exhaust emissions from these engines included nitrogen oxides, carbon monoxide, and particulates, meaning visible emissions (such as smoke) and non-visible emissions. The commenter stated that exposure to diesel exhaust can lead to serious health concerns (asthma, respiratory illnesses, exacerbation heart and lung disease, etc.) and environmental impacts (ground-level ozone, acid rain, damage to crops, soil, etc.) The commenter suggested the following measures be included in the 2023 amendments:

- Prohibiting truck idling outside of concrete facilities;
- Rerouting, limiting, or prohibiting truck traffic, specifically through residential areas; and
- Prohibiting truck parking and/or speeding in residential areas.

RESPONSE

Trucks are considered mobile sources, which are not regulated by air permits issued by the TCEQ. Air permitting requirements only apply to stationary sources. However, trucks may be subject to requirements in 30 TAC Chapter 114, Control of Air Pollution from Motor Vehicles, for use of low emission diesel fuel and/or restrictions on idling, but these requirements vary depending on location. Emissions from diesel trucks are also subject to federal standards such as 40 CFR Part 1065, or other federal regulations depending on the model year and category of engine.

TCEQ is also prohibited from regulating roads per the TCAA §382.003(6), which excludes roads from the definition of “facility.” Similarly, TCEQ does not have the authority to regulate traffic on public roads, and public safety, including access, speed limits, and public roadway issues. These concerns are typically the responsibility of local, county, or other state agencies, such as the Texas Department of Transportation (TxDot) and the Texas Department of Public Safety (DPS). Concerns regarding roads should be addressed to the appropriate state or local officials.

B. Setback Distances and Buffer Zones

COMMENT 20:

EPA stated that relying on a minimum 100 feet setback distance alone does not appear to be adequate to address quality of life impacts a CBP may have on adjacent residents and businesses. EPA stated that they conducted a review of CBP general permits across the US and found that the setback distance requirements varied widely, with some states having more stringent requirements and some not having any setback distance limitations.

The City of Houston, City of Dallas, and an individual stated that all emissions sources of a facility should be located at least 1,650 feet away from subdivisions, residential properties, public or private schools, places of worship, public parks, outdoor sports, or recreational fields, crushing plants, and hot mix asphalt plants. The commenters stated that CBP operations emit fugitive emissions that include several air pollutants, including ozone precursors such as nitrogen oxides (NO_x) and VOCs and other criteria pollutants like PM₁₀ and PM_{2.5} (fine particulate matter). The commenters noted that CBPs include multiple sources of fugitive emissions, including unloading of aggregate or sand from truck, rail or barge onto storage piles; movement of aggregate and sand to maintain the shape of storage piles; filling the bucket of the front-end loader for transfer to the hoppers; wind erosion of sand and aggregate storage piles; and movement of delivery trucks, cement trucks and front-end loaders over haul roads and yard surfaces. The commenters stated that internal plant roadways are also big contributors to the overall level of dust associated with a plant. The commenters stated that pollutants such as PM, VOCs, and ozone may cause significant health effects, including fatigue, nausea, and dizziness; reduced lung function; worsening of medical conditions like asthma and heart disease; and increased mortality from lung cancer and heart disease.

An anonymous commenter stated that the rule proposes a minimum 100 feet setback for most counties in Texas, including their own Bexar County. The commenter stated that, due to the speed dust can travel, this setback will do little to mitigate health and environmental hazards to neighbors of these plants, even with the proposals to reduce this dust by water, chemical and other treatment. The commenter stated that the proposed setback requirement is too small, and that Bexar County, with much CBP expansion activity, should be included in the counties with 200-foot minimum setbacks.

EPA stated that the modeling results for Region 15 (Cameron and Hidalgo Counties) 300 cubic yards per hour (yd³/hr) with partial enclosure operating scenario show a 24-hour PM_{2.5} predicted plus background concentration of 34.96278 micrograms/m³ at 200 feet. EPA noted this concentration is 99.9% of the 24-hour PM_{2.5} NAAQS, and an increase of just four-hundredths of a microgram in (e.g., slightly higher background concentration) would result in a modeled violation of the NAAQS at the property line based on the proposed 200 feet setback distance. EPA strongly encourages TCEQ to increase the alternative setback requirement for the 300 yd³/hr scenario in Table 3 for Cameron and Hidalgo counties to at least 300 feet.

Harris County recommended that TCEQ further expand buffer zones for a CBP authorized by the CBPSP and that TCEQ consider whether proximity to a church, school, medical facility, residence, or other sensitive populations should result in an increased buffer distance.

TRAM and SCLSC recommended that instead of location-specific setback distances as proposed, TCEQ adopt a unified setback distance of 300 feet to be applied state-wide. The commenters stated that this would allow for a more consistent application of this rule across the state.

SCLSC stated that the proposed setbacks fail to address rapid growth around existing and new CBP facilities, especially in large urban areas.

RESPONSE

To support the proposed amendments to the CBPSP, the TCEQ conducted a protectiveness review to ensure emissions from facilities authorized by the standard permit are protective of human health and the environment. A protectiveness review is a demonstration using air dispersion modeling to evaluate the potential impacts of the proposed operation as represented in the standard permit.

Background pollutant concentrations were determined for different regions in order to account for their unique air quality characteristics. The results of the air dispersion modeling, based on using the maximum production limits represented in the standard permit, were used to develop setback distances between facilities at the CBP and the nearest property line for different regions of the state. The results of the air dispersion modeling also accounted for multiple CBPs at a site provided that the maximum production limits represented in the standard permit are met. As discussed in Section A of this response to comments, the results of the protectiveness review demonstrate that the standard permit is protective at the property line and beyond for both healthy individuals and sensitive groups.

The location of a CBP authorized by the amended CBPSP is determined by the applicable setback distances in subsections (8)(A) and (9)(A). The setback distances are based on the protectiveness review that evaluated the different CBP types, production rates, applicable emission controls, and locations. As a result, the setback distances in the amended standard permit are greater in some instances than the current CBPSP. The standard permit also addresses nearby aggregate handling operations through an existing provision that requires at least 550 feet between the authorized CBP and any crushing plant or hot mix asphalt plant. The protectiveness review demonstrates that the buffer zones and setback restrictions in the amended standard permit are sufficient to protect human health and the environment. The protectiveness review does not indicate that additional buffer zones or setback distances to residences, schools, parks, or communities are necessary.

As some commenters suggested, TCEQ considered a statewide, uniform setback distance, but ultimately determined that a uniform statewide setback distance would impose an unnecessary limitation in areas of the state where background concentrations of relevant pollutants are low. The use of different setback distances in the standard permit for different regions provides an authorization that is protective of human health in all regions while allowing more flexibility for CBPs in appropriate areas.

COMMENT 21:

EPA and an individual suggested that, in addition to setback distances, TCEQ impose a minimum distance limitation that ensures the protection of human health and one that will minimize local air quality concerns at the neighborhood level for any new CBP where an adjacent property may be used as a single or multifamily residence, school, nursing home, or place of worship. The commenters also stated that TCEQ should exercise its discretion to deny CBP permits if that assurance cannot be demonstrated by the applicant or if TCEQ has significant concerns about an area being overburdened or disproportionately impacted with air emission sources. The commenters stated that TCEQ should also exercise the same denial authority at renewal if a source has a demonstrated record of causing air quality concerns and/or nuisance concerns for local citizens.

RESPONSE

To support the proposed amendments to the CBPSP, TCEQ conducted a protectiveness review to ensure emissions from facilities authorized by the standard permit are protective of human health and the environment. The results of the air dispersion modeling, based on using the maximum production limits represented in the standard permit, were used to develop setback distances between facilities at the CBP and the nearest property line for different regions of the state. The results of the protectiveness review demonstrate that the standard permit is protective at the property line and beyond. The protectiveness review does not indicate that additional setback distances to residences, schools, parks, or communities are necessary to protect human health or the environment.

The executive director's staff reviews air quality applications in accordance with the applicable state and federal law, policy and procedures, and the agency's mission to protect the state's human and natural resources consistent with sustainable economic development. TCEQ cannot deny authorization of a facility if a permit application contains a demonstration that all applicable statutes, rules, and regulations will be met. However, TCEQ reviews compliance history for applications that are required to publish notice, and at permit renewal TCEQ can modify the renewal period, if necessary, based on the compliance history.

COMMENT 22:

Harris County recommended that TCEQ expand setback requirements for mixing equipment and silos from the property lines.

RESPONSE

The definition of setback distance has been updated and is now defined in Section (2) as the "minimum distance from the nearest suction shroud fabric/cartridge filter exhaust (truck mix plant), drum feed fabric/cartridge filter exhaust (central mix plant), batch mixer feed exhaust (specialty plant), cement/fly ash storage silos, and/or engine to any property line." The definition has been clarified to specify the exhaust point for each type of plant and include the cement/fly ash storage silos.

For central mix and specialty plants, the mixer exhaust is included in the definition of setback distance. Truck mix plants do not have mixing equipment since the truck itself performs the mixing of the concrete. However, the suction shroud exhaust for a truck mix plant is included in the setback distance definition.

The setback distances in subsections (8)(A) and (9)(A) are based on the protectiveness review which evaluated the different CBP types, production rates, applicable emission controls, and locations. As a result, the setback distance requirements are greater in some instances than the current (2021) CBPSP.

COMMENT 23:

SCLSC recommended specific permit rules to require the stationary equipment, stockpiles and vehicles being used at all new CBPs to be sited and operated at a minimum distance of 100 feet from any property line in subsection (8)(H).

RESPONSE

The protectiveness review included impacts from stationary equipment, stockpiles, and vehicles. As a result, subsection (8)(H) requires that stationary equipment (excluding the suction shroud fabric/cartridge filter exhaust, drum feed fabric/cartridge filter exhaust, cement/fly ash storage silos, and engine), stockpiles, and vehicles used for the operation of the CBP (except for incidental traffic and the entrance and exit to the site), must not be located closer than 50 feet less than the applicable minimum setback distance listed in subsection (8)(A) from any property line.

In lieu of meeting the distance requirements for roads and stockpiles of subsection (8)(H), the owner or operator under subsection (8)(I) must construct and maintain in good working order dust suppressing fencing or other equivalent barriers as a border around roads, other traffic areas, and work areas; construct these borders to a height of at least 12 feet; and contain stockpiles within a three-walled bunker that extends at least two feet above the top of the stockpile. These methods are considered to be effective at minimizing dust emissions.

COMMENT 24:

SCLSC and TRAM recommended revisions to Section 9 of the standard permit relating to setback distances for Specialty Concrete Batch Plants. The commenters recommended that subsection (9)(B) include a 300 feet setback from the property line for exhaust from the batch mixer feed, and that subsection (9)(E) include a 100 feet setback from any property line for operation of vehicles.

RESPONSE

Estimated emissions for specialty plants are based on a central mix operation with emission factors from AP-42 Chapter 11.12, Table 11.12-2. The mixer loading and weigh hopper emissions are reduced by 90% due to being vented inside an enclosure, which is the worst-case control method specified in subsection (9)(C) of the standard permit. Emissions from specialty concrete batch plants were included in the protectiveness review that resulted in the setback distances specified in subsection (9)(A). Emissions from specialty concrete batch plants are expected to be protective if operated in accordance with the amended CBPSP.

The minimum buffer distance for vehicles used for the operation of the specialty concrete batch plant was increased from 25 feet to 50 feet less than the setback distance in subsection (9)(A) from the property line in subsection (9)(D) of the amended CBPSP. In lieu of meeting the buffer distance requirement for roads and other traffic areas in subsection (9)(D) of this standard permit, owners or operators must construct dust suppressing fencing or other barriers as a border around roads, other traffic areas, and work areas; and construct these barriers to a height of at least 12 feet as specified in subsection (9)(E).

C. Cumulative Impacts, Multiple Facilities, and Site-Specific/Additional Modeling

COMMENT 25:

Nikolaos Ziropoulos stated that the amendment does not require air quality modeling as part of the CBP permitting process, which makes the estimation of CBP-specific and industry-wide cumulative air quality impacts infeasible. The commenter noted that EPA has recently acknowledged this problem and highlighted the need for estimation of cumulative impacts of exposure as part of the permitting process of industrial facilities (Reilly 2022).

AGC requested that TCEQ clearly describe how it considered “cumulative impacts” in the development of the standard permit, as well as provide information on how TCEQ determines that all air permits are protective at the property line.

An individual expressed general concern about the health effects of living near multiple CBPs. An individual stated that decisions should include information on the total pollutants in the area.

The City of Dallas and an individual stated that owners and operators should be prohibited from operating multiple batch plants on the same site. The commenters stated that fugitive emissions from a single batch plant may vary widely depending upon a variety of factors, and that multiple batch plants substantially increase fugitive emission variability, particularly without any requirement to conduct air dispersion modeling. The commenters stated that allowing the operation of multiple batch plants at one location reduces the ability of the owner or operator to prevent human health and environmental impacts to the community.

Harris County recommended that the permit prohibit co-location of plants and set a minimum distance from another CBP, or aggregate producing, handling, or processing facility.

The City of Dallas stated that each owner/operator should be required to submit air dispersion modeling as part of their registration for the CBPSP. The commenter stated that fugitive emissions from batch plant operations, such as PM and NO₂, vary widely depending upon the equipment used (e.g., front-end loaders), level of traffic and activity in and around the facility, prioritization of housekeeping and compliance obligations, and other factors. Dispersion modeling will better clarify fugitive emissions from each facility.

Harris County stated that cumulative impacts were only considered for commonly owned CBPs (those which are part of the same site). The commenter stated that the same cumulative impacts that trigger additional constraints would exist regardless of the ownership status of multiple adjacent plants. The commenter stated that the requirements presented in proposed subparagraph (8)(A)(iii), referencing Table 3 should have a similar requirement for any batch plant proposed to be located adjacent to or near an existing CBP regardless of whether there is common ownership or control. The commenter also stated that the standard permit should require a set buffer distance between CBPs as determined by modeling from a protectiveness review that is fully protective of human health.

Harris County stated it is unclear how the protectiveness review assessed cumulative impacts from multiple PM sources in areas of concentrated operations. The commenter asked how TCEQ assessed cumulative impacts to ensure a facility authorized under the CBPSP is protective of human health and the environment.

EPA, TRAM, and an individual stated that in the protectiveness review, modeled impacts from CBP facilities were combined with a background ambient concentration, but it did not appear that any additional off-site emission sources were included in the cumulative analysis. The commenters also stated that the proposed CBP does not include any proximity limitations regarding multiple concrete plants located near each other. The commenters stated that the protectiveness review should be updated to account for the possible overlap of impacts of multiple CBPs in close proximity to each other, to ensure that cumulative impacts will not lead to violations of the NAAQS, state health effects levels, or cause nuisance level impacts on local residents and businesses. TRAM stated that CBP applicants should conduct a modeling analysis that includes emissions from nearby sources.

EPA stated that most counties remain at the 100 feet setback distance and that it does not appear that TCEQ explicitly considered cumulative impacts in the determination of these setback distances.

TRAM stated that use of existing and/or part-time operated TCEQ air monitors at large distances from the proposed CBP does not sufficiently represent the background air quality at or near the CBP site.

TRAM stated that inclusion of cumulative impacts from PM emissions should be an integral part of protectiveness reviews, especially for multiple APOs located in close proximity to populated areas and other sources of PM pollution, such as highways and refineries. The commenter stated that it is crucial to consider the impacts of nearby aggregate mines, including the mining and crusher facilities, as well. In addition, the commenter stated that particulate dispersion modeling should incorporate hot mix asphalt plants and other nearby CBPs, rather than solely focusing on modeling a single CBP and assuming everything is satisfactory.

TRAM suggested that, before a permit is approved for a second or multiple CBPs (where each is permitted the max individual standard permit operating rate) on the same site, a site specific TCEQ protectiveness review, including dispersion modeling, be conducted to assess the cumulative particulate concentrations in the surrounding areas adjacent to the plant. The commenter stated this updated, site-specific protectiveness review is needed to determine the cumulative emission impacts of multiple CBPs (including existing and proposed) at the same site.

SCLSC stated that TCEQ needs to address the “multiple plant siting problem” when there are two or more CBPs operating within one industrial site even though TCEQ has tended to grant separate air permits as they are treated as different CBPs for permitting purposes. The commenter stated that more stringent permitting and technical evaluations need to be required including cumulative air modeling analysis of such adjacent CBPs. The commenter stated this should also apply to multiple CBP plants sited next door to each other.

RESPONSE

Additional modeling for individual registrations is not required for use of the CBPSP per THSC, §382.058(d). To support the proposed amendments to the CBPSP, the TCEQ conducted a protectiveness review to ensure emissions from facilities authorized by the standard permit are protective of human health and the environment. As previously discussed in Section A of this response to comments, a protectiveness review is a demonstration using air dispersion modeling to evaluate the potential impacts of the proposed operation as represented in the standard permit. The results of the air dispersion modeling, based on using the maximum production limits represented in the standard permit, were used to develop setback distances between facilities at the CBP and the nearest property line for different regions of the state. The modeling evaluation also considered scenarios where multiple plants are located on the same site. The results of the protectiveness review demonstrate that the standard permit is protective at the property line and beyond.

With regard to cumulative impacts, explicitly modeling off-property emission sources within the framework of a generic model set-up (as was used in the CBPSP protectiveness review) is a difficult task to conduct without considering hundreds of additional model runs to account for different distances, as well as relative direction of the off-property emission sources from the “on-property” emission sources. For example, some of the terminology used in the above comments (e.g., “nearby each other” and “in close proximity to each other”) reinforces the challenges with conducting such an exercise.

To account for this, the TCEQ conducted modeling that purposefully relied on conservative modeling techniques; conservative meaning that selections were made to yield higher predicted concentrations than would be observed. The following approaches were used in the modeling of the CBP facilities:

- Source co-location. All of the sources included in the modeling analysis were modeled together at the same location – this is called co-locating sources. Modeling all of the sources located together forces their plumes to overlap with each other, leading to a higher model prediction of pollutant concentration. In reality, the sources are likely spread out in a different configuration at the plant and the likelihood of their plumes frequently overlapping is not that great.
- Receptor grid – meteorological data configuration. The modeling analysis used a polar receptor grid with 36 radials spaced every 10 degrees from true north. Each radial included a receptor every 100 feet out to 1000 feet from the center point. The wind directions in the meteorological data set were not randomized and were set at 10-degree intervals to coincide with the receptor radials. This would provide predictions along the plume centerline for every modeled hour, which provides a conservative result.

To address cumulative impacts, as applicable, background concentrations were determined for different TCEQ regions and added to the model predicted concentrations. The combined concentrations (background plus model-predicted) were used to develop setback distances which account for the unique air quality characteristics for different regions of Texas and are protective at the property line. Many of the monitoring sites in Texas are located in urban areas (related to higher populations and associated mobile source emissions) and/or industrialized areas (associated with greater amounts of emissions released into the atmosphere). And with respect to the monitors located in urban areas, many of these monitors are located close to roads/highways and/or highly industrialized areas. For TCEQ regions with multiple monitoring sites, the higher background concentrations were used in the analysis. This approach is reasonable to follow – for project sites located in urban/industrial areas, the approach would yield background concentrations that are representative for the project site location. For the project sites located in more rural or less industrialized areas, the approach would yield conservative background concentrations for the project site location. TCEQ believes that this approach sufficiently considered elevated background concentrations that may be present in industrialized areas or areas with multiple sources. Any attempt to add additional, hypothetical off-site sources to the protectiveness review would be highly arbitrary and the results would not necessarily be representative of actual impacts at any particular real-world sites.

Some commenters expressed concern about multiple CBPs operating at the same site, or the distance to other CBPs or aggregate producing, handling, or processing facilities. The protectiveness review considered scenarios where multiple batch plants operate on the same site, which resulted in the sitewide production limits and setback distances for multiple plants in Table 3 of Section (8). An owner or operator of multiple plants must comply with these production limits and setback distances. Subsection (5)(1) requires a CBP to be at least 550 feet from any crushing plant or hot mix asphalt plant. If the owner or operator cannot meet this distance, then the owner or operator must not operate the CBP at the same time as the crushing plant or hot mix asphalt plant. Therefore, the amended CBPSP includes limitations on co-location of other plants along with distance requirements to other aggregate processing facilities.

COMMENT 26:

Harris County stated that the proposed CBPSP caps the hourly production rate for a single CBP operating in Harris County at 200 yd³/hr, but allows multiple plants operating at the same site to increase the total site production rate to 300 yd³/hr. The commenter stated that, if a single batch plant results in emissions that require production limits to be set at 200 yd³/hr, it is unclear how multiple plants at a site would require less restrictive production limits and remain protective. The commenter requested that the total site production rate for multiple plants be the same as a single plant (200 yd³/hr).

Public Citizen requested clarification of proposed Tables 1-3, specifically that it appeared that a site with multiple plants is allowed a larger production rate than is allowed for a site with a single plant. The commenter stated this might encourage an operator to split the facility into multiple plants or encourage siting of multiple plants on one site. The commenter expressed concern over possible clustering of facilities.

RESPONSE

For sites that will contain multiple CBPs, a partial enclosure will be required for all truck loading activities. This additional level of control allows the hourly production rate for multiple CBPs to be no more than 300 yd³/hr.

COMMENT 27:

Senator Miles stated that TCEQ should be given the authority to consider the cumulative public health impacts of all the polluting facilities in an area and to deny permits because of those cumulative effects. The commenter stated that the protectiveness review nominally takes cumulative effects into consideration but offers no pathway to block a permit due to such effects. (For example, Senate Bill 87, 87R.)

RESPONSE

The commission appreciates the comments, but these issues are outside the scope of the proposed amendment. The results of the protectiveness review demonstrate that the standard permit is protective at the property line and beyond. No change has been made to the standard permit in response to this comment.

D. Nuisance Conditions and Other Adverse Impacts (Dust, Noise, Light, etc.)

COMMENT 28:

LSLA stated that TCEQ must prevent nuisance issues, including dust, emanating from permitted CBPs. The commenter noted that 30 TAC §101.4 prohibits emissions that adversely affect human health or interfere with the normal use or enjoyment of property.

LSLA expressed concern about PM emissions from uncovered stockpiles close to a property line. The commenter stated that watering stockpiles is often ineffective as the water evaporates nearly as fast as it can be sprayed on. The commenter stated that their observations suggest that most of the industry keeps stockpiles uncovered for convenience. The commenter stated that TCEQ should consider requiring watering and an additional dust suppression method in order to effectively control dust. The commenter stated that covering stockpiles should be a mandatory requirement for all CBPs.

LSLA stated that TCEQ should consider additional, mandatory measures to minimize dust sources and prevent nuisances. The commenter provided a list of measures that could be taken to reduce dust, including but not limited to keeping cement in enclosed silos; keeping mixing equipment, silos, and stockpiles away from property lines; adding filters to the silos; enclosing conveyors; using baghouses where concrete is mixed and where it is dropped into trucks; and spraying of roads and stockpiles.

The commenter described dust clouds around existing CBP facilities which are not contained at the fence line. The commenter stated that although there are methods to control fugitive dust emissions in the CBPSP, it is largely left up to the operator to decide when to employ these methods. The commenter stated that the CBPSP should require more regular monitoring or stricter controls to ensure dust does not leave the property.

RESPONSE

The controls required in the amended standard permit represent current TCEQ Tier 1 Best Available Control Technology (BACT) for CBPs. Current Tier I BACT for CBPs is defined as the use of the following minimum acceptable controls:

- Dry material storage silo vents and weigh hopper vents – emissions controlled by dust collector with an outlet grain loading of no greater than 0.01 grains per dry standard cubic foot (gr/dscf) or control efficiency of at least 99%.
- Aggregate material handling – 70% reduction, all aggregate material prewashed prior to delivery.
- Aggregate stockpiles – 70% reduction typically using water spray system.
- Truck drop point – emissions captured with a suction shroud with minimum of 5,000 actual cubic feet per minute of air flow exhausted to a dust collector with an outlet grain loading of no greater than 0.01 gr/dscf or control efficiency of at least 99%.
- Central mixer – emissions controlled by a dust collector with an outlet grain loading of no greater than 0.01 gr/dscf or control efficiency of at least 99%, minimum of 5,000 actual cubic feet per minute of air flow.
- Visible emissions – no visible emissions shall leave the property from filter systems, mixer loading, batch truck loading, silo loading, engine/generator, transfer points on belt conveyors, material storage or feed bins, stockpiles, internal roads, or work areas. Visible emissions are determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA Test Method 22 or equivalent.
- Engine – fired using liquid fuel with a sulfur content of no more than 0.0015 percent by weight and not consisting of a blend containing waste oils or solvents.

Estimated emissions based on the above controls were used in the protectiveness review. Compliance with the requirements of the standard permit, including applicable setback distances, is expected to result in a level of emissions deemed protective at the property line and beyond.

Aggregate stockpiles are required to be either watered, covered, or sprayed with dust suppression chemicals at all times. These methods would either meet or exceed BACT for control of stockpile emissions.

In addition, the standard permit requires the permit holder to demonstrate compliance with 30 TAC §101.4 Nuisance, which prohibits discharge from any source whatsoever one or more air contaminants or combinations thereof, in such concentration and of such duration as are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property.

The TCEQ evaluates all complaints received. If a facility is suspected to be out of compliance with the terms and conditions of its permit, it will be subject to investigation and possible enforcement action. Individuals are encouraged to report any concerns about nuisance issues or suspected noncompliance with terms of any permit or other environmental regulation by submitting a complaint using one of the methods described at the following link: www.tceq.texas.gov/compliance/complaints.

Citizen-collected evidence may also be submitted. See 30 TAC §70.4, Enforcement Action Using Information Provided by Private Individual, for details on gathering and reporting such evidence. Under the citizen-collected evidence program, individuals can provide information on possible violations of environmental law. The information, if gathered according to agency procedures and guidelines, can be used by the TCEQ to pursue enforcement. In this program, citizens can become involved and may eventually testify at a hearing or trial concerning the violation. For additional information, see the TCEQ publication, "Do You Want to Make an Environmental Complaint? Do You Have Information About a Possible Violation?" This booklet is available in English and Spanish from the TCEQ Publications office at 512-239-0028 and may be downloaded from the agency website at www.tceq.texas.gov (under Publications, search for document number GI-278).

COMMENT 29:

SCLSC stated that the existing and proposed amended CBPSP conditions do not clearly state that CBPs possessing inherent fugitive emissions of cement dust, aggregate dust, fly ash dust, and sand dust are strictly prohibited from causing or contributing to a Condition of Air Pollution defined under the authority of the Texas Clean Air Act (TCAA) and Texas Health and Safety Code including a Nuisance as defined under 30 TAC §101.4.

Harris County stated that they receive many complaints about off-site nuisance impacts which are prohibited by THSC, §385.085 and 30 TAC §101.4. The commenter stated it was unclear what, if any, nuisance analysis TCEQ conducted, including any assessment of the impacts and projected emission reductions provided by the operational requirements imposed in the proposed standard permit subsection (8)(G).

RESPONSE

As addressed in responses to other comments relating to nuisance conditions, the amended standard permit requires use of BACT and best management practices to control and mitigate emissions of dust and other pollutants from CBP operations. Nuisance conditions are not expected if the facility is operated in compliance with the terms of the standard permit. In addition, in response to these and other comments, language has been added to subsection (5)(N) that requires a plant authorized under this standard permit to comply with 30 TAC §101.4, Nuisance. This rule states that no person shall discharge from any source whatsoever one or more air contaminants or combinations thereof, in such concentration and of such duration as are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property. Although 30 TAC §101.4 applies to CBPs regardless of whether it is specifically referenced within the permit, this requirement has been added to subsection (5)(N) as a reminder to owners and operators that operations must not cause a nuisance.

COMMENT 30:

Harris County stated that they receive numerous complaints from residents living near CBPs, including dust on vehicles, off-site tracking of material, inability to enjoy use of property, and the triggering of health conditions. The commenter stated that CBPs often fail to clean up spilled materials, operate with missing or damaged suction shrouds, fail to maintain buffer distances for stockpiles, and fail to perform sweeping and collection. The commenter also stated that FLIR cameras have shown emissions moving past the property line and leading to accumulation on neighboring properties.

RESPONSE

Standard permits for CBPs in Texas are required to ensure that authorized emissions do not cause or contribute to an exceedance of the federal health-based air quality standards for PM₁₀ and PM_{2.5}. Despite this requirement, neighbors may have complaints about dust/PM emission from CBPs. Of the PM emitted from CBPs, including exhaust from any diesel engines operating onsite, about 50% are particles that are too large to enter the human respiratory tract (greater than 10 µm in diameter) and these particles are often visible as dust. As part of the updated protectiveness review conducted during the amendment, potential emissions associated with CBPs were determined to be protective at the property line and beyond, as discussed elsewhere in TCEQ's responses to comments regarding health concerns and the protectiveness review. The updates to the standard permit, which include updates to operational requirements, setback distances and other best management practices ensure that requirements in the standard permit are protective of human health and the environment. In addition, requirements were added to the standard permit to remind operators that they must comply with 30 TAC §101.4, which prohibits nuisance conditions. The TCEQ evaluates all complaints received. If a site is found to be out of compliance with the terms and conditions of its permit, it will be subject to investigation and possible enforcement action. Individuals are encouraged to report any concerns about nuisance issues or suspected noncompliance with terms of any permit or other environmental regulation by submitting a complaint using one of the methods described at the following link: www.tceq.texas.gov/compliance/complaints.

COMMENT 31:

LSLA stated that trucks leaving CBP facilities impact the community by increasing fugitive dust emissions and by dumping hot concrete on the side of the road and the driveway. The commenter stated that this damages the streets and affects or damages cars on the road driving behind the trucks. The commenter stated that regulations need to be added to ensure these impacts do not pose further nuisance to vehicles and streets. LSLA expressed concern about dust associated with traffic to and from CBP facilities, and the nuisance character of such traffic.

RESPONSE

Although TCEQ rules (30 TAC §101.4) prohibit creation of a nuisance, TCEQ does not have jurisdiction to consider traffic, road safety, or road repair costs when determining whether to approve or deny a permit application. In addition, trucks are considered mobile sources, which are not regulated by the TCEQ except for limited requirements under 30 TAC Chapter 114. TCEQ is also prohibited from regulating roads through air permitting as THSC, §382.003(6) excludes roads from the definition of "facility."

However, independently of the air permit for the plant, an owner/operator of a CBP is prohibited by TCEQ rule (30 TAC §101.5) from discharging air contaminants, uncombined water, or other materials from any source which could cause a traffic hazard or interference with normal road use. Sources operated in compliance with the terms and conditions of the permit would not reasonably be expected to cause these conditions to occur. Individuals are encouraged to report any concerns about nuisance issues or suspected noncompliance with terms of any permit or other environmental regulation by submitting a complaint using one of the methods described in www.tceq.texas.gov/compliance/complaints. If a site is out of compliance with the terms and conditions of the permit, it may be subject to possible enforcement action.

Similarly, TCEQ does not have the authority to regulate traffic on public roads, load-bearing restrictions, and public safety, including access, speed limits, and public roadway issues. These concerns are typically the responsibility of local, county, or other state agencies, such as the Texas Department of Transportation (TxDot) and the Texas Department of Public Safety (DPS). Concerns regarding roads should be addressed to the appropriate state or local officials.

COMMENT 32:

EPA noted that nuisance conditions are not allowed under 30 TAC §101.4, but complaints indicate that these facilities routinely allow potentially offensive levels of PM emissions to migrate beyond the property line. EPA and LSLA also stated that complaints indicate issues with noise and light pollution that persist during the night hours. EPA and LSLA stated that these potential nuisance conditions impact residents' quality of life and may interfere with the normal use and enjoyment of their property, nearby parks, schools, and other outdoor public spaces. EPA stated that TCEQ should take into consideration the siting of CBPs within residential communities and the impact to the quality of life for residents living near them. EPA stated that TCEQ should offer practical solutions to prevent nuisance conditions from occurring and ensure that those seeking coverage under the standard permit are implementing its requirements continuously. EPA stated that, for example, TCEQ could impose additional restrictions to ensure CBPs near residential areas are not operating from dusk to dawn, and by imposing requirements, as practicable, to reduce the noise and traffic during the day. EPA and LSLA recommended that TCEQ restrict the hours of operation for facilities near residences and provide lighting restrictions during night hours. LSLA provided a list of specific noise and light management measures they recommended that TCEQ include. An individual expressed concern about noise and light from CBPs.

RESPONSE

TCEQ does not have the authority to consider potential effects from plant location, aesthetics, zoning and land use issues, traffic, noise, or light, when determining whether to approve or deny registrations for this standard permit. Noise ordinances are normally enacted by cities or counties and enforced by local law enforcement authorities. Questions, concerns, or complaints about noise or light pollution, zoning, or land use should be directed to local governments with jurisdiction over these issues. The issuance of an air quality authorization does not override any local zoning requirements that may be in effect and does not authorize an applicant to operate outside of local zoning requirements. With respect to the commenter's concerns about PM emissions causing a nuisance, CBPs operated in compliance with the conditions of the standard permit would not reasonably be expected to cause nuisance conditions. Individuals are encouraged to report any concerns about nuisance issues or suspected noncompliance with terms of any permit or other environmental regulation by submitting a complaint using one of the methods described in www.tceq.texas.gov/compliance/complaints. If nuisance conditions in violation of 30 TAC §106.4 are confirmed by TCEQ investigators, or if any violations of permit conditions are identified, an enforcement action can be initiated. As the TCEQ continues to evaluate and monitor this industry sector, the commission will evaluate adding additional work practices or controls for any future rulemakings.

E. Modeling (Technical/Other)

COMMENT 33:

EPA, TRAM, City of Dallas, and an individual stated that TCEQ's protectiveness review was based on the ISCST3 model, and that this model is no longer EPA's preferred air dispersion model. The commenters stated that AERMOD contains new or improved algorithms for several aspects of meteorology, plume behavior, and wake effects. TRAM stated that a paper published in the Journal of the Air & Waste Management Association showed that AERMOD was more sensitive to small changes in wind speed and surface roughness, as well as to changes in albedo, temperature, and cloud cover. TRAM stated that the study concluded that when AERMOD is used to determine property line concentrations, small changes in these variables may affect the distance within which concentration limits are exceeded by several hundred meters. The commenters recommended that the protectiveness review of the permit be reevaluated using AERMOD. The City of Dallas stated that TCEQ should use AERMOD to remodel air emissions from batch plants and conduct separate modeling analyses to account for the different pollutant levels that exist in the different towns, cities, and regions of the State. AGC stated that TCEQ should explain that the AQA is a conservative modeling exercise. LSLA expressed unspecified concerns about the sufficiency or protectiveness of modeling.

RESPONSE

AERMOD is EPA's preferred model for major new source review permitting; that is, those new major sources or major modifications that trigger federal review. Since the CBP operations authorized under a standard permit are minor sources, and in fact cannot be major, the TCEQ contends that use of the ISCST3 model (ISC) to conduct the protectiveness review is acceptable and scientifically justified.

Modelers have been using the ISC model in permitting for more than 25 years. Developers created the model to be easy to use and to address complex atmospheric processes in a relatively simple way that all users can understand. Developers based the ISC model on the Gaussian distribution equation and it is inherently conservative due to the main simplifying assumptions made in its derivation. These assumptions are:

- Conditions are steady-state (for each hour, emissions, wind speed, and wind direction are constant) and the dispersion from source to receptor is effectively instantaneous;
- There is no plume history as model calculations for each hour are independent of those in other hours;
- Mass is conserved (no removal due to interaction with terrain, deposition, or chemical transformation) and is reflected at the surface; and
- Plume spread from the centerline follows a normal Gaussian distribution and only vertical and crosswind dispersion occurs. The model ignores dispersion downwind.

TCEQ applied the model in a screening mode to ensure predictions were conservative and applicable for any location in the state. Take surface characteristics as an example; the ISC model handles surface characteristics simplistically, using either rural or urban dispersion coefficients. The TCEQ evaluated both rural and urban dispersion coefficients and reported the higher concentration of the two options as the maximum predicted concentration. Using AERMOD would have required considering site-specific surface characteristics. Rather than the two choices of surface characteristics for ISC, AERMOD would have required dozens to capture a sufficient variation across the state. With dozens of choices of surface characteristics, the reasonable worst-case for all CBPs across the state would be unclear.

Furthermore, the majority of the new and/or improved model algorithms listed for AERMOD by one commenter (EPA) are not relevant for the CBP facilities being modeled in the protectiveness review. And the objective of the analysis was not to estimate refined model predictions associated with a particular time or certain operating conditions. Instead, the objective was to determine reasonable worst-case model predictions following conservative approaches. In doing so, the TCEQ used the ISC model as a screening technique in the context of this protectiveness review, since the purpose of such techniques is to eliminate the need for more detailed refined modeling when those sources would not cause or contribute to a violation of the NAAQS.

COMMENT 34:

EPA stated that the protectiveness review modeling was conducted using 5 years of 1980s meteorological data from the Austin surface station and the Victoria upper air station. EPA asked that TCEQ provide additional information on the record to support the statement that “this five-year data set would include worst-case short-term meteorological conditions that could occur anywhere in the state.” EPA suggested that the protectiveness review utilize more recent meteorological data” or that, at a minimum, TCEQ provide additional information to justify the use of the older meteorological data.

RESPONSE

The purpose of the air dispersion modeling analysis for the protectiveness review is to estimate reasonable worst-case pollutant concentrations using representative meteorological data, acceptable modeling techniques, and source data represented in the CBPSP. An important component to meteorological data representativeness is whether or not the worst-case meteorological conditions have been sufficiently represented in the meteorological dataset. For the CBPSP, the facilities that are greatly contributing to the model predicted concentrations are characterized as low-level sources that are fugitive in nature. Low-level fugitive emissions will have worst-case concentrations during periods of low wind speeds and stable (limited vertical mixing) atmospheric conditions. These atmospheric conditions are common for many late night/early morning hours for not only the Austin-Victoria area, but the entire state of Texas. And with the use of five years of hourly meteorological data in the modeling analysis, the worst-case meteorological conditions have been sufficiently represented in the dataset.

Using meteorological data collected thirty-five to forty years ago in the air dispersion modeling analysis does not affect the validity of the AQA performed for the protectiveness review. While daily weather conditions can vary within a given year, the worst-case meteorological conditions that occur during a given year are typically the same as other years. With over 40,000 hourly samples contained within the five-year meteorological dataset used in the air dispersion modeling analysis, the worst-case meteorological conditions have been sufficiently represented in the dataset.

Older meteorological datasets are readily available, and more importantly, the meteorological datasets are complete datasets.

COMMENT 35:

EPA stated that it is not clear from the modeling report if the modeled fugitive emissions also account for the emissions of PM from on-site roads. EPA requested that TCEQ clarify how road emissions were accounted for in the modeling analysis.

Public Citizen stated that it seems odd that TCEQ did not include mobile sources in the modeling or protectiveness review, but the standard permit still includes conditions about vehicles in subsection (8)(H) and elsewhere. The commenter noted that trucks have emissions resulting from loading of material, emissions from material falling from the truck while in motion, and entrainment of dust/dirt from road surfaces, and asked for clarification of which types of emissions were modeled or not modeled.

RESPONSE

Particulate matter emissions from on-site roads were not explicitly modeled during the protectiveness review. Predicted concentrations from on-site road emissions are likely to be unrepresentative due to the modeling process. The modeling process is based on the assumption that emissions are continuous. The amount of on-site road emissions is directly related to the type and amount of road traffic, which is usually not continuous or uniform. The use of control measures and best management practices are the most effective means to address off-property impacts from on-site road sources. Subsection (5)(E) of the proposed standard permit notes that owners or operators shall control emissions from in-plant roads and traffic areas at all times by one or more of the following methods:

- Watering them;
- Treating them with dust-suppressant chemicals as described in the application of aqueous detergents, surfactants, and other cleaning solutions in the de minimis list;
- Covering them with a material such as, but not limited to, roofing shingles or tire chips and used in combination with watering or treating with dust-suppressant chemicals; or
- Paving them with a cohesive hard surface that is maintained intact and cleaned.

PM emissions from truck loading activities were explicitly modeled during the protectiveness review for multiple production rates and control scenarios.

COMMENT 36:

EPA stated that the modeling analysis included a single point source to represent emissions from baghouses and a single point source to represent emissions from internal combustion engines. EPA stated that the amended standard permit does not appear to restrict a CBP to only one baghouse and one internal combustion engine. EPA requested that TCEQ clarify for the record how the current modeling analysis demonstrates compliance with applicable NAAQS and state health effects levels when more than one baghouse and/or more than one internal combustion engine is present.

RESPONSE

A single point source was modeled to represent the baghouse/silos emissions using emission rates that correspond to maximum hourly and annual production rates. If the pollutant-specific emission rates that were used for the single point source were divided among multiple point sources (to represent multiple baghouse/silos), the model would produce the same maximum predictions provided the modeled locations and source parameters are the same as those used for the single modeled point source (which they would be following a conservative co-locating source approach), and that the emissions that were split sum to the total amount modeled from the single point source. Given this, the limitations needed would be related to the maximum hourly and annual production rates.

A single point source was modeled to represent the internal combustion engines using emission rates that correspond to internal combustion engine size and applicable emission factors. If the pollutant-specific emission rates that were used for the single point source were divided among multiple point sources (to represent multiple internal combustion engines), the model would produce the same maximum predictions provided the modeled locations and source parameters are the same as those used for the single modeled point source (which they would be following a conservative co-locating source approach), and that the emissions that were split sum to the total amount modeled from the single point source. Given this, the limitations needed would be related to the size of the internal combustion engine and any associated emission factors. Subsection (6)(A) of the proposed standard permit limits the size of the internal combustion engine (or combination of engines) to no more than 1000 horsepower. Subsection (6)(E) of the proposed standard permit limits emissions from the internal combustion engine (or engines) to not exceed 2.61 grams per horsepower-hour of NO_x (the limiting pollutant for impacts purposes).

COMMENT 37:

Harris County stated that the TCEQ's modeling of airborne PM emissions is linked to the composition of the dry material, with no consideration to other characteristics such as density/weight/size that would impact the airborne concentrations. The commenter stated that percentages on safety data sheets reflect the composition of the bulk material, not the airborne dust generated from the handling of the bulk material.

RESPONSE

Safety Data Sheets were solely used to determine a maximum silica content of the total mixture. Cement is a milled product with a relatively uniform and standardized particle size distribution. The TCEQ used EPA factors that were based on testing of CBPs to predict the particle size distribution and emission rates of the sources. Therefore, evaluating a fraction of total particulate was considered the appropriate methodology for determining speciated emission rates.

F. Proposed Changes to PM_{2.5} NAAQS.

COMMENT 38:

EPA, Harris County, LSLA, Public Citizen, TRAM, and an individual noted that EPA has proposed to revise the NAAQS for PM_{2.5} to a level within the range of 9.0 – 10.0 micrograms/m³ and stated that if the PM_{2.5} standard is lowered, there could be a significant impact on the protectiveness review for the standard permit. Commenters stated that this could result in a need for increased buffer distances, lower production rates, more stringent controls, or other changes to the standard permit. Commenters also noted that a more stringent PM_{2.5} standard could result in a number of Texas counties becoming classified as nonattainment for PM_{2.5}. Commenters recommended a number of possible measures or approaches to address the impact of a revised PM_{2.5} standard, including: providing increased setback distances or other control measures that would be triggered upon adoption of a more stringent NAAQS; TCEQ commit to a timely reevaluation or reopening of the protectiveness review in the event the revised PM_{2.5} standard is finalized prior to adoption of the standard permit; and, TCEQ consider the proposed change to the PM_{2.5} NAAQS, and/or the updated nonattainment status for each county, when determining the applicable setback distance for each county.

LSLA stated that the proposed changes to the federal PM_{2.5} standard make TCEQ's plan for delayed implementation not feasible, as it almost ensures that communities near large or multiple CBPs will still not be protected by the CBPSP. LSLA expressed concern that Harris County will be out of attainment for PM before the TCEQ can start its next amendment process. The City of Dallas stated that the Dallas-Fort Worth area is in severe nonattainment for the 2008 ozone standard, and that permitting of batch plants should work to reduce ozone level and at least maintain PM_{2.5} levels in the area.

RESPONSE

Given the uncertainties associated with the range of proposed levels of the annual PM_{2.5} standard, as well as the timing of the final promulgation of any revision to the annual PM_{2.5} standard, the TCEQ conducted the protectiveness review using the current annual PM_{2.5} standard (12 micrograms/m³). If a revision to the annual PM_{2.5} standard is adopted, the TCEQ will re-evaluate the protectiveness review and take necessary steps to ensure compliance with the NAAQS.

COMMENT 39:

Nikolaos Ziropiannis stated that CBPs in Harris County are collectively a major pollution source, contributing between 38-111 tons of primary PM_{2.5} emissions and 109-493 tons of primary PM₁₀ emissions. (Based on the PM₁₀ and PM_{2.5} emission thresholds from the air permits of all 131 CBP that were active in Harris County in 2021.)

RESPONSE

TCEQ acknowledges that collectively, PM emissions from all CBPs in Harris County may appear to be substantial, however based on data from Texas' annual emission inventory, these quantities represent only a fraction of the countywide PM emissions from reporting sources. TCEQ also notes that the actual emissions of PM from CBP sites should be lower than the theoretical emissions based on the maximum allowable emission rates allowed by their air permit.

Individual sites with emissions of 250 tons per year (tpy) or more of any regulated NSR pollutant are considered major sources under federal Prevention of Significant Deterioration (PSD) rules. These thresholds are found in 40 CFR §51.166(b)(1). CBPs are permitted on an individual or per-site basis, and any potential emissions from an individual batch plant located at a site would be less than the relevant PSD major source thresholds.

G. Standard Permit Conditions (Operational, Technical, Administrative)

COMMENT 40:

AGC stated that the proposed amendments do not appear to differentiate between "central mix" or "wet batch" plants and other types of plants. AGC stated that central mix plants have lower emissions than dry mix plants and should be specifically accounted for in the standard permit. AGC stated that, since central mix plant emissions are lower, current allowable production rates should be maintained. AGC stated that a common portable wet batch plant used by contractors is an Erie Strayer MC-11, which is rated at 330 yd³/hour, with a batch time of two minutes. AGC stated that on jobs where trucking and placement are unconstrained, such as a greenfield highway project or a mass pour for a bridge pylon, plant production can reach 300 yd³/hr. AGC stated that it is not uncommon for central mix plants to run at 250 to 280 yd³/hr.

AGC stated that if TCEQ intends to add an additional table for central mix plants, AGC also recommends that the current setback of 100 feet for the dust collector exhaust be retained and applied statewide. AGC also stated that shrouds for central mix plants are not necessary since the material handled at the drop point is wet concrete. AGC noted that shrouds on central mix plants are not required in the current permit.

ZCC stated that, overall, the amendments are appropriate, but they respectfully offered several specific comments for consideration. The commenter noted that the proposed operational requirements do not distinguish between dry and wet batch (central mix) CBPs, and instead addressed only dry batch plants that generate greater emissions. The commenter stated that this resulted in an artificially low emission-based hourly production cap of 200 yd³/hr for central mix plants. The commenter stated that their temporary central mix plants are rated at 330 yd³/hr and have approached the 300 yd³/hr production cap in the current standard permit on several public works projects. The commenter stated that they routinely operate wet batch plants above the 200 yd³/hr cap proposed in the amendments to meet construction schedules on TxDOT highway projects. The commenter stated that setting an artificially low production cap on central mix plants would result in extended project schedules causing increased plant and construction related emissions, as well as emissions from prolonged traffic congestion. The commenter also stated that capping central mix plants at 200 yd³/hr (as opposed to 300) would lead to millions of dollars in increased construction costs for medium and large projects. The commenter requested that TCEQ acknowledge the different emission rates between wet batch and dry batch processes and establish individual production caps for the two types of plants.

ZCC stated that, in a central mix plant, the mixing of concrete happens in the plant and the material discharged at the drop point is premixed wet concrete. The commenter stated that discharge of wet concrete does not cause emissions, and encouraged TCEQ to exempt central mix plants from shroud requirements, and to consider retaining the current 300 yd³/hr production cap.

RESPONSE

In response to these comments, the amended Standard Permit for Concrete Batch Plants has been updated to include requirements specific to central mix (also known as wet mix) plants. New subsection (8)(A)(iv) has been added to specify the maximum production limit of 300 yd³/hr and minimum setback distances based on location. These setback distances are based on an updated protectiveness review using estimated emissions for central mix plants. Additional requirements for central mix plants have been added to subsection (8)(D) to include the requirement of the drum feed exhaust being totally enclosed with captured emissions vented to a fabric/cartridge filter system resulting in lower estimated emissions.

COMMENT 41:

TCPA expressed support for TCEQ's conducting an updated AQA to address public concern about potential health impacts from CBPs registered under the standard permit. The commenter stated that the proposed production limitations for specialty plants in Section (9) (30 yd³/hour and 131,400 yd³/year) could be problematic. The commenter stated that specialty plants can consist of multiple indoor mixers that are automated for different production lines depending on the desired product. The commenter recommended that TCEQ add an option for increased site-wide production at 60 yd³/hour and 262,800 yd³/year with a doubled distance of 200 feet from any property line as long as the plant is located indoors. The commenter stated that, for the associated protectiveness review, they support TCEQ's use of EPA's emission factors for central mix along with 90% control for full enclosure of the plant. The commenter stated that the increased production rates would come with increased control and increased distances, which they fully support.

RESPONSE

Section (9) of the amended standard permit has been updated to include a required setback distance of 200 feet and a maximum annual production rate of 262,800 yd³/year for Specialty Plants producing more than 30 yd³ but less than or equal to 60 yd³ of concrete per hour, in addition to the requirements for Specialty Plants producing no more than 30 yd³ per hour of concrete.

Subsection (9)(C) requires an owner or operator of a Specialty Plant to control dust emissions at the batch mixer feed so that no outdoor visible emissions occur by one of the following methods:

- (i) Use of a suction shroud or other pickup device delivering air to a fabric or cartridge filter;
- (ii) Use of an enclosed batch mixer feed; or
- (iii) Conducting the entire mixing operation inside an enclosed process building.

Estimated emissions for specialty plants are based on a central mix operation with emission factors from AP-42 Chapter 11.12, Table 11.12-2. The mixer loading and weigh hopper emissions are reduced by 90% due to being vented inside an enclosure, which is the worst-case control method specified in subsection (9)(C) of the standard permit. Emissions from specialty plants were included in the protectiveness review, which resulted in the setback distances specified in subsection (9)(A). Emissions from specialty concrete batch plants are expected to be protective if operated in accordance with the amended CBPSP.

COMMENT 42:

TACA expressed support for the three-side enclosure concept in subsection (8)(E) and the extended three-sided enclosure concept in subsection (8)(F). The commenter requested clarification on how this would affect drive-through plants with these three-sided enclosures.

RESPONSE

The commission appreciates the support. Subsection (8)(E) requires the use of an intact three-sided enclosure with a flexible shroud hanging from above the truck, or equivalent dust collection technology that extends below the mixer truck-receiving funnel. The intent of this design requirement is for the suction shroud to essentially be an enclosure consisting of the three sides that hang on the sides and rear of the truck along with a flexible side above the truck. The sides must hang down below the truck receiving funnel. The top of the suction shroud would act as a roof. Due to the amount of enclosure, this design is expected to capture at least 99% of the PM emissions during the loading of the mixer trucks. An equivalent design may be used that meets these design requirements. For a drive-through plant, flexible sides may be used in order to allow a truck to pull under the suction shroud.

Subsection (8)(F) requires the use of a three-sided solid enclosure or equivalent that extends from the ground level to three feet above the truck-receiving funnel. The intent of this design is for the enclosure to surround the rear of the truck when the receiving funnel is located with sides and rear walls consisting of solid materials that extend from the ground to three feet above the funnel height. Due to the amount of enclosure, this design is expected to capture at least an additional 85% of the PM emissions during loading of the mixer trucks. An equivalent design may be used that meets these design requirements. For a drive-through plant, doors that consist of solid materials may be used that close behind the truck once the truck has pulled into a drive-through plant. The doors must remain closed during the entire loading process. Another option would be to locate the entire plant within a building enclosure with doors that are closed once the

truck has pulled into the loading position. The doors must remain closed during the entire loading process.

COMMENT 43:

Holcim stated that they operate many temporary and permanent CBPs throughout Texas and oppose the following addition to the Standard Permit: “for truck mix plants, the owner or operator shall shelter the drop point by an intact three-sided enclosure with a flexible shroud hanging from above the truck, or equivalent dust collection technology that extends below the mixer truck-receiving funnel.” The commenter stated that this requirement is not practical or even feasible for temporary plants that frequently pack up and relocate, and construction of such enclosures when a three-sided shroud is already required only adds cost and will be onerous to maintain without adding any additional control. The commenter stated this requirement should be limited to permanent plants only or those wishing to take advantage of alternate setbacks.

RESPONSE

A standard permit is intended to authorize the most common operations for the specific industry. If a site cannot qualify for the amended Standard Permit for Concrete Batch Plants, an owner or operator may apply for the Air Quality Standard Permit for Concrete Batch Plants with Enhanced Controls or a case-by-case NSR permit authorized under 30 TAC Chapter 116, Subchapter B.

COMMENT 44:

SCLSC expressed support for the proposed conditions that all sand and aggregate bulk materials need to be washed prior to delivery to the facility. The commenter stated this precleaning would help reduce fugitive PM likely to be emitted from sand and aggregate bulk materials.

RESPONSE

The commission appreciates the support and agrees that this requirement will reduce PM emissions that could otherwise occur during transport, handling, and processing of such materials.

COMMENT 45:

SCLSC expressed support for the proposed requirements of subsection (8)(J) and stated that requiring the paving of all traffic and parking areas within a facility is a good rule.

RESPONSE

The commission appreciates the support and agrees that paving entry and exit roads and main traffic routes is an appropriate and effective method to reduce PM emissions.

COMMENT 46:

TACA expressed support for the concept of four examples representing track out in subsection (8)(G) but requested specific clarification that a plant may use one of any of these four methods to control track out. AGC also expressed support for the proposed best management practices for track-out and dust control in subsection 8(G) but requested clarification. AGC stated that each measure may not be feasible or necessary in certain regions of the state. AGC recommended that the condition be revised to read that “one or more” of the methods be used.

RESPONSE

The commission appreciates the support. Subsection (8)(G) has been updated to clarify that tracking of sediment onto adjacent roadways is to be prevented by using one or more of the four methods in paragraphs (8)(G)(i) through (iv).

COMMENT 47:

TACA stated that they are aware that the preamble states that there is no longer a daily production limit and that associated recordkeeping requirements have been removed. TACA expressed support for this edit.

RESPONSE

The commission appreciates the support. The amended CBPSP no longer includes a daily limit on concrete production or the associated recordkeeping for daily production. Hourly limits are included in Tables 1 through 4 for permanent and temporary plants according to location, plant type, and setback distance, along with a yearly production limit of 650,000 yd³/yr in any rolling 12-month period. For specialty plants, hourly and annual limits on concrete production are included in Table 5 along with required setback distances. Recordkeeping is required to demonstrate compliance with the hourly and yearly production limits.

COMMENT 48:

Various commenters as identified below expressed support for specific features or aspects of the standard permit.

LSLA expressed support for the additional control measures, production caps, and other measures to reduce emissions and protect the community.

AGC expressed support for clarifying amendments to proposed Sections (1) and (2) and the addition of a definition of “setback distance.” AGC also supported the amendments referring to the CBPSP workbook and in paragraph (3)(J)(iii), concerning the demonstration of compliance with production limitations. AGC also stated that the monthly silo warning device or shut-off system tests are appropriate, and they support the proposed change to paragraph (3)(J)(viii). AGC also supported the proposed changes to Section (5). AGC expressed general support for TCEQ’s use of custom setback distances for different regions of the state. AGC also supported the flexibility afforded by proposed paragraph (8)(A)(ii). AGC stated that the controls described in subsections (8)(E) and (F) are technically feasible and provide a protective alternative means of compliance with the proposed set-back requirements.

TACA expressed support for the definitional revisions in Section 2 of the draft permit. TACA also supports the “three-sided solid enclosure” concept in subsection (8)(F), the prevention of tracking of sediment in subsection (8)(G), and the minimum setback requirement in subsection (8)(H). TACA was also supportive of the practices listed in subsection (8)(I) as alternatives for complying with the minimum setback requirement of subsection (8)(H) and the proposed road and drive path maintenance best management practices in subsection (8)(J).

RESPONSE

The commission appreciates the support.

COMMENT 49:

TACA stated the “best available control technology” for CBPs is unclear and asked that TCEQ define or clarify “best available control technology” as written in the March 17, 2023, Interoffice Memorandum.

RESPONSE

Current TCEQ Tier 1 BACT for CBPs is defined as the use of the following minimum acceptable controls:

- Dry material storage silo vents and weigh hopper vents – emissions controlled by dust collector with an outlet grain loading of no greater than 0.01 grains per dry standard cubic foot (gr/dscf) or control efficiency of at least 99%.

- Aggregate material handling – 70% reduction with all aggregate material prewashed prior to delivery.
- Aggregate stockpiles – 70% reduction typically using water spray system.
- Truck drop point – emissions captured with a suction shroud with minimum of 5,000 actual cubic feet per minute of air flow exhausted to a dust collector with an outlet grain loading of no greater than 0.01 gr/dscf or control efficiency of at least 99%.
- Central mixer – emissions controlled by a dust collector with an outlet grain loading of no greater than 0.01 gr/dscf or control efficiency of at least 99%, minimum of 5,000 actual cubic feet per minute of air flow.
- Visible emissions – no visible emissions shall leave the property from filter systems, mixer loading, batch truck loading, silo loading, engine/generator, transfer points on belt conveyors, material storage or feed bins, stockpiles, internal roads, or work areas. Visible emissions determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA Test Method 22 or equivalent.
- Engine – fired using liquid fuel with a sulfur content of no more than 0.0015 percent by weight and not consist of a blend containing waste oils or solvents.

The requirements in the amended CBPSP meet current TCEQ Tier 1 BACT.

COMMENT 50:

Harris County stated that stockpile emissions used in the modeling were based on an area of 1.5 acres, but there is no limitation in the proposed standard permit on the stockpile footprint. Harris County requested language be added to the amended standard permit limiting stockpiles to 1.5 acres and recommended that TCEQ establish emission limits or place other operational restrictions on plant emission sources for those that are not limited by throughput restrictions (i.e., the baghouse), such as the conveyors and stockpiles. LSLA stated that the size or location of stockpiles should be considered to advise the operator whether more stringent measures need to be adopted in certain situations where operators are maintaining larger piles, or the piles are placed closer to the property boundaries.

RESPONSE

A requirement was added to subsection (5)(F) to limit the total ground surface areas of stockpiles to 1.5 acres. Estimated emissions for stockpiles are directly related to the stockpile acreage and conservatively assuming the stockpiles are active 365 days per year.

For other sources at a CBP, estimated emissions from the material handling, silo loading, weigh hopper loading, central fabric/cartridge filter system, and truck mix loading are directly related to the production rate of the plant. The composition of ingredients in a standard cubic yard of concrete is detailed in AP-42 Chapter 11.12 Concrete Batching, Table 11.12-6. For example, 1,428 pounds of sand are required for every cubic yard of concrete. Depending on the material handled in each source, the estimated emissions are calculated using the amount of the material required to produce the amount of concrete. The sand handling emissions for a 300 yd³/hr plant, for example, are based on 214 tph and 464,100 tpy of sand. Therefore, limits on the production rate of concrete directly limit the individual sources at the CBP and only records of the production of concrete are required to demonstrate compliance with each emission source.

In addition, subsection (8)(H) was updated to limit the location of stationary equipment, stockpiles, and vehicles used for the operation of the CBP (except for incidental traffic and the entrance and exit to the site) to no closer than 50 feet less than the applicable minimum setback distance listed in subsection (8)(A) from any property line. For example, if the minimum setback distance for a plant is 200 feet, then the stockpile should be located at least 150 feet away from the nearest property line. This change is a result of the updated AQA.

COMMENT 51:

AGC stated that proposed subsection (8)(H) appears to increase the buffer for stockpiles and vehicles from the current 50 feet. AGC recommended that the current language of the standard permit be restored for the following reasons:

- As drafted, this would render large portions of a property unusable.
- These requirements could adversely affect current operations as they may not have enough property to relocate stockpiles and/or have to reconfigure their entire site.
- If an operator is required to bunker stockpiles away from the property line, this could create a significant safety issue for plant personnel.
- The proposed provision could also require an operator to obtain an individual permit, a significant resource commitment to both the operator and the agency; or shut down.
- At the May 22, 2023, informational meeting in Houston, TCEQ acknowledged that stockpiles are not a significant source of emissions, and stockpiles do not drive the impacts review. Further, TCEQ has adequate authority to address any nuisance conditions that may arise.

RESPONSE

The distance requirements for a CBP authorized by the amended CBPSP are determined by the applicable setback distances in subsections (8)(A) and (9)(A). The setback distances are based on the protectiveness review, which evaluated the different CBP types, production rates, applicable emission controls, and locations. As a result, the amended setback distances are greater in some instances than in the current CBPSP.

Due to the requirement that the aggregate materials be pre-washed and watered, the stockpile emissions are not significant when compared to other sources at a CBP and are not the main driver of the impacts in the AQA. The main driver or culpable source in the protectiveness review is the fugitive emissions from the truck mix loading point. As a result, the setback distances are based on the use of the additional 3-sided enclosure to reduce fugitive emissions.

If a site cannot qualify for the amended CBPSP, an owner or operator may apply for the Air Quality Standard Permit for Concrete Batch Plants with Enhanced Controls or a case-by-case NSR permit authorized under 30 TAC Chapter 116, Subchapter B.

COMMENT 52:

AGC expressed support for proposed subsection (8)(B) and requested two clarifications. First, AGC requested language adding temporary CBPs that are located contiguous to the right-of-way of a public works project. AGC stated this would be consistent with how such facilities are described in Texas Health and Safety Code, Chapter 382 and 30 TAC §116.178(b).

AGC also stated that they interpret the intent of the proposed language to also provide that, in addition to the minimum setback requirements, subsections (8)(E) and (F) also do not apply to temporary CBPs located in or contiguous to the right-of-way of a public works project. AGC proposed clarifying changes to subsection (8)(B) to exempt temporary CBPs approved to operate in or contiguous to the right of-way of a public works project from subsections (8)(E) and (F) and the minimum setback requirements.

RESPONSE

The commission appreciates the comment. The permit language in subsection (8)(B) has been updated to be consistent with language in 30 TAC §116.178(b) and to clarify the intent that temporary CBPs approved to operate in or contiguous to the right of-way of a public works project are exempt from subsections (8)(E) and (F) and the minimum setback requirements.

COMMENT 53:

ZCC noted that the definition of “related project segments” in subsection (2)(F) allows for one plant on TxDOT right-of-way (ROW) to serve other TxDOT projects that are in “close proximity.” The commenter stated that the term “close proximity” lacks specificity and needs clarification. The commenter stated that it was denied approval to serve two TxDOT projects that were within 1.5 miles of each other on separate parallel roadways but not on the same roadway system. The commenter requested that TCEQ consider defining “close proximity” as within a 10-mile radius, which is a reasonable travel distance for maintaining the integrity and workability of concrete. The commenter also requested that TCEQ consider changing the subsection (2)(F) requirement for a plant to be “on TxDOT” ROW to “be in or contiguous to the ROW” for consistency with subsection (2)(G). The commenter stated that these changes would enable TxDOT contractors to mobilize fewer plants to construct highway projects versus unnecessarily erecting multiple plants or purchasing concrete from more distant sources increasing trucking and its associated emissions, congestion, and roadway wear.

RESPONSE

The commission appreciates the comments. Applications for ROW projects are evaluated on a case-by-case basis to determine if the projects meet the criteria for related project segments. No change has been made to the standard permit in response to this comment.

COMMENT 54:

AGC expressed support for the reorganization of the temporary CBP relocation requirements in proposed Section 10 but requested that TCEQ provide more detail on what would be required for the representation of maximum hourly and annual production as stated in paragraph (10)(B)(vi).

RESPONSE

The commission appreciates the support. The information in subsection (10)(B) must be provided in writing, along with the form required in subsection (10)(C), to the appropriate regional office. This includes the maximum hourly and annual production throughputs.

COMMENT 55:

AGC requested that the approval process in Section (10) for a temporary CBP proposed to be located in or contiguous to the right-of-way of a public works project be streamlined to the greatest extent possible. AGC cited as an example the Notice of Intent process under stormwater general permitting. ACG also suggested that as an alternative, Section (10) could be amended to add a provision that a relocation of a temporary CBP under proposed paragraph (10)(A)(i) is considered approved within five business days of submittal if there is no action taken by the appropriate regional office. ACG also requested that TCEQ implement SB 1397 by issuing the separate standard permit (for temporary concrete plants for public works) contemplated by the new statutes at the same time as it issues the revised CBP SP.

RESPONSE

As part of TCEQ's Sunset review, a requirement to create a new and separate standard permit for Certain Temporary Concrete Plants for Public Works was included in Senate Bill 1397, 88th Legislature. The executive director will take this recommendation into consideration as part of the development of the new standard permit as it proceeds with the rulemaking process.

COMMENT 56:

AGC stated that not all CBPs supporting public works can operate in or contiguous to the right of way, so provisions related to those operations should be retained in the CBPSP or established in their own standard permit for temporary concrete plants, similar to the structure for hot mix asphalt plants and crushers.

RESPONSE

The commission appreciates the comment and agrees that the requirements for CBPs supporting public works projects but not located in or contiguous to the right of way should remain in the current standard permit.

COMMENT 57:

AGC stated that TCEQ should provide existing CBPs with sufficient time to come into compliance with the amendments to the standard permit. AGC recommended a minimum of 12 months.

Harris County stated that 30 TAC §116.605(d)(1) provides TCEQ the authority to require all operators to comply with the CBP standard permit amendment as soon as possible when it is "necessary to protect public health." The commenter stated that the 2023 Protectiveness Review and increased restrictions on batch plant operations in the proposed CBP standard permit demonstrate that the 2012 protectiveness review and the 2021 CBP Standard Permit is not protective of human health. The commenter stated that many CBPs are currently operating under the 2012 and the 2021 CBP Standard Permit and may be emitting PM and/or crystalline silica at dangerous concentrations, impacting nearby residents. The commenter stated that under 30 TAC §116.605(e), the TCEQ should require all plants to register under the amended CBP Standard Permit within 3 months from its adoption.

TACA requested that TCEQ clearly state how CBPs will continue to comply with their existing standard permits pending the revisions associated with this non-rule standard permit project.

RESPONSE

Per 30 TAC §116.605(d), a facility registered under the earlier versions of the standard permit will need to comply with the amended standard permit by the later of either the deadline the commission provides in the amendment or the date the registration to use the standard permit is required to be renewed. However, the commission may not require compliance with an amended standard permit within 24 months of its amendment unless it is necessary to protect public health.

COMMENT 58:

Harris County recommended that, prior to operation, TCEQ should require a facility to submit an As-Built Certification, signed and sealed by an engineer, to the TCEQ and the local pollution control authority.

RESPONSE

Holders of standard permits are required to comply with 30 TAC §116.615(2) which requires that "all representations with regard to construction plans, operating procedures, pollution control methods, and maximum emission rates in any registration for a standard permit become conditions upon which the facility or changes thereto, must be constructed and operated. It is unlawful for any person to vary from the representations if the change will affect that person's right to claim a standard permit under this section." Therefore, a holder of a standard permit registration would be in violation of 30 TAC Chapter 116 if the CBP was not constructed according to the representations in the standard permit application. Furthermore, no other facility types are required to submit as-built certifications for air authorizations. The TCEQ cannot impose more stringent requirements than other similar industries without a reasonable justification as to why the more stringent requirement is necessary.

COMMENT 59:

Harris County recommended that TCEQ require the permittee to minimize drop heights of materials to reduce dust.

RESPONSE

Minimizing drop heights of materials is considered a best management practice for transfer points in the aggregate industries. In TCEQ's experience, owners or operators of these types of facilities consistently follow this best management practice to reduce loss of materials used to make product. Therefore, a requirement to minimize drop heights of materials is unnecessary.

COMMENT 60:

Harris County recommended that TCEQ require the following in relation to material stockpiles: a) be covered when not in use; b) be located a set distance from the property boundary; c) to be enclosed in bins; and d) limit the height of the enclosed stockpiles to 2 feet below the top of the bins.

RESPONSE

Subsection (5)(F) requires that owners or operators use water, dust suppressant chemicals, or cover stockpiles, as necessary to minimize dust emissions. These requirements represent BACT for controlling dust emissions from aggregate stockpiles. Subsection (8)(H) requires that stockpiles be located no closer than 50 feet less than the applicable minimum setback distance. In lieu of meeting the setback distance requirements for stockpiles, subsection (8)(I) requires stockpiles to be contained in a three-walled bunker that extends at least two feet above the top of the stockpile. In addition, the standard permit in subsection (5)(L) requires sand and aggregate to be washed prior to delivery to the site to further minimize dust emissions from the aggregate stockpiles. Estimated emissions from aggregate stockpiles using the above

controls and setback distances were included in the protectiveness review, which determined that the emissions from stockpiles would be protective of human health and welfare.

COMMENT 61:

Public Citizen asked if the standard permit contemplates or could contemplate the use of electric engines. The commenter noted that subsection (6)(D) states that “fuel for the engine shall be liquid fuel,” which could be interpreted to not permit the use of electric engines in the future.

RESPONSE

CBPs use electric motors and other electrical components to operate the various equipment such as the fan motors in the fabric/cartridge filter systems and the electric motors used in the material handling conveyance. The electric motors and other electric components at CBPs are normally operated using electricity supplied by a connection to the electrical power grid. When a connection to the power grid is unavailable, a stationary compression ignition internal combustion engine (or combination of engines) is used to generate electricity to power the CBP. These engines are commonly referred to as diesel engines and must comply with the requirements in Section (6) of the amended standard permit which includes the use of liquid fuel.

CBPs operated solely using electricity from the power grid are expected to only emit PM from the handling of aggregate, cement, and cement supplement. CBPs that are operated by electricity generated by diesel engines will also emit products of combustion from the firing of liquid fuel. Products of combustion include carbon monoxide, nitrogen oxides, organic compounds, hazardous air pollutants, and PM.

Regarding the comment that the amended standard permit may not permit the use of electric engines in the future, TCEQ is unfamiliar with the term “electric engine.” The term “engine” is normally associated with the combustion of a fuel, whereas a “motor” is run by electricity. An “electric” engine would imply that the engine is run on electricity, such as a “gasoline” engine or “diesel” engine. Electricity itself is not a combustion type process and does not emit any air contaminants. No emissions would be generated from such an engine, and therefore, an air authorization would not be required. Since no authorization would be required for such an engine, the amended standard permit would not prohibit its use at a CBP.

COMMENT 62:

EPA noted that in reference to permit condition (8)(1), dust suppression fencing comes in a variety of materials, designs, and options that may affect its performance and lifespan. EPA stated that the standard permit should specify parameters for which the barrier fencing must comply with for its design. In addition, EPA stated that the standard permit should require regular inspection of the barrier fencing, regular cleaning at a specified interval, and replacement of any barrier material on a specified schedule to ensure proper effectiveness of the barrier fencing at suppressing dust.

The commenters (City of Dallas and an individual) stated that, in Definitions subsection (2)(D), the permit should only allow “dust suppressing fencing” and not “other barriers.” The commenters stated that dust suppressing fencing should be defined as solid fence materials as allowed by the jurisdiction or municipality that is at least 12 feet high that is used to prevent fugitive dust from stationary equipment stockpiles, in-plant roads, and traffic areas from leaving the plant property. The commenters also stated that the standard permit should require regular inspection of the barrier fencing, regular cleaning at a specified interval, and replacement of any barrier material on a specified schedule to ensure proper effectiveness.

RESPONSE

The definition of dust suppression fencing in subsection (2)(E) has been updated to “dust suppressing fencing or other equivalent barrier.” The purpose of the update is to clarify that the other barrier is to be equivalent to dust suppression fencing. This clarification allows flexibility for the owner or operator to construct a barrier that meets the requirements of the amended Standard Permit for Concrete Batch Plants. This barrier could be dust suppression fencing, an earthen berm, or other equivalent manmade obstruction as long as the barrier is at least 12 feet high.

In addition, subsection (8)(l)(i) has been updated to require that the dust suppressing fencing or other equivalent barrier be maintained in good working order. Furthermore, paragraph (3)(J)(iv) has been updated to require records be kept of “all repairs and maintenance of abatement systems and other dust suppression controls.” Other dust suppression controls would apply to dust suppressing fencing or other equivalent barriers. These requirements are expected to cause the owner or operator to regularly inspect and repair, as necessary, the dust suppressing fencing or other equivalent barriers in order to remain in compliance with the amended Standard Permit for Concrete Batch Plants.

COMMENT 63:

The City of Dallas and an individual stated that, at General Requirements (Section (5)) and Operational Requirements (Section (8)), the permit should reduce the types of housekeeping and maintenance activities to better reduce fugitive emissions. For example, the commenters stated that the General Requirements in subsection (5)(E) should make clear that an owner or operator of a permanent batch plant is only allowed to control emissions from in-plant roads and traffic areas by paving them with a cohesive hard surface that is maintained intact and cleaned. The commenter stated that allowing the use of watering, dust suppressant chemicals, and materials such as roofing shingles threatens efforts to improve local water quality, maintain PM attainment status, reduce landfill material, and protect the health of residents.

The City of Dallas stated that to prevent tracking of sediment onto adjacent roadways and reduce the generation of dust, operational requirements at subsection (8)(G) should require an owner or operator to, at minimum, both use a vacuum truck (or equivalent) to clean the plant road entrances and use a pre-wash system to remove sediment from the wheels and undercarriage of trucks that haul aggregate, cement, and concrete. The commenter stated that tracking of sediment and dust onto nearby roadways is a primary concern for nearby residents and requires a more comprehensive solution than what is currently required by the draft permit.

Commenters (City of Dallas and an individual) also stated that the permit’s housekeeping and maintenance requirements should include specific standards. For example, the commenters noted that General Requirements subsections (5)(F) and (G) require the owner and operator to “minimize dust emissions” and “immediately clean up spilled material” but provide no definitions or emission or clean-up standards. Operational Requirements at subsection (8)(G) require “the use of a vacuum truck to clean the plant road entrances,” or “the use of a pre-wash system” but provide no definitions or emission or clean-up standards. As a result, owners and operators may have varying understandings of how to comply with these requirements, implement activities and techniques that vary in effectiveness, and ultimately negatively impact the health and environment of residents.

RESPONSE

The standard permit requires control processes to minimize dust. Compliance with the standard permit requirements should not reasonably be expected to result in deterioration of air quality or the generation of dust such that it impacts visibility. While nuisance conditions are not expected if the facility is operated in compliance with the terms of the permit, operators must also comply with commission rule 30 TAC §101.4, which prohibits nuisance conditions. The requirements listed in General Requirements subsection (5)(E) represent four approved methods that operators may use to control emissions from in-plant roads and traffic areas. This general requirement is applicable to all CBPs authorized by the standard permit including temporary plants that are sited along right-of-way locations, where paving would not be appropriate.

Further, Operational Requirements for Permanent and Temporary Concrete Plants subsection (8)(J) requires that, "For permanent plants, the owner or operator shall pave all entry and exit roads and main traffic routes associated with the operation of the concrete batch plant (including batch truck and material delivery truck roads) with a cohesive hard surface that shall be cleaned and maintained intact."

Operational Requirements for Permanent and Temporary Concrete Plants subsection (8)(G) was incorporated to address frequent comments received regarding nuisance conditions associated with tracking sediment onto adjacent roadways. Operators must use at least one of the four methods to satisfy this requirement.

COMMENT 64:

Harris County expressed concern that the setback distance requirements are exempted if the owner or operator constructs a dust suppressing fence or other barriers as a border around roads, other traffic areas, and work areas, constructs these borders to a height of at least 12 feet; and contains stockpiles within a three-walled bunker that extends at least two feet above the stockpile. The commenter stated that failure to adhere to the maintenance of stockpile height limits within the three-walled bunker is a commonly observed violation and facilities generally have no urgency to abate the violation when it is noted by an investigator. The commenter stated that this should not be allowed as an exemption in an enforceable standard permit when the distance requirements are more enforceable and are more likely to be complied with by an owner or operator.

RESPONSE

Subsection (8)(H) for truck mix and central mix plants requires stationary equipment (excluding the suction shroud fabric/cartridge filter exhaust, drum feed fabric/cartridge filter exhaust, cement/fly ash storage silos, and engine), stockpiles, and vehicles used for the operation of the CBP (except for incidental traffic and the entrance and exit to the site), shall not be located closer than 50 feet less than the applicable minimum setback distance listed in subsection (8)(A) from any property line. In lieu of meeting these distance requirements, subsection (8)(I) allows the owner or operator to construct and maintain in good working order dust suppressing fencing or other equivalent barriers as a border around roads, other traffic areas, and work areas, construct these borders to a height of at least 12 feet, and contain stockpiles within a three-walled bunker that extends at least two feet above the top of the stockpile. The requirements listed in subsection (8)(I) are considered to be equivalent to the dust suppression obtained from the setback distance in subsection (8)(H).

Subsection (9)(D) for specialty plants requires the owner or operator to not operate vehicles used for the operation of the CBP (except for incidental traffic and the entrance and exit to the site) within a minimum buffer distance of 50 feet less than the applicable minimum setback distance listed in subsection (9)(A) from any property line. In lieu of meeting these distance requirements, subsection (9)(E) allows the owner or operator to construct dust suppressing fencing or other barriers as a border around roads, other traffic areas, and work areas and construct these barriers borders to a height of at least 12 feet. The requirements listed in subsection (9)(E) are considered to be equivalent to the dust suppression obtained from the setback distance in subsection (9)(D).

Estimated emissions based on the controls required by the amended Standard Permit for Concrete Batch Plants were used in the protectiveness review. Compliance with the requirements of the standard permit, including the applicable setback distances specified in Sections (8) and (9), is expected to result in a level of emissions demonstrated to be protective at the property line and beyond.

COMMENT 65:

SCLSC stated that TCEQ needs to improve the best management practices for use in its air quality models to more carefully evaluate if they should be required. The commenter stated this is a critical requirement due to the rapid growth of neighborhoods and sensitive receptors around CBPs.

RESPONSE

Additional requirements were added to the standard permit to improve best management practices and to help reduce the potential generation of nuisance dust and prevent the tracking of sediment onto adjacent roadways. These updates were not made based on the results of the updated protectiveness review but were based on public comment concerning CBPs.

COMMENT 66:

TRAM expressed support for the proposed requirement in subsection (8)(J) to pave all entry and exit roads and main traffic routes. The commenter stated that unpaved roads and paved roads with accumulated aggregate material may lead to PM entering the air through entrainment. The commenter recommended that TCEQ require additional strategies to increase the effectiveness of this approach, such as paving of all traffic areas, and not simply allowing the less effective control strategies in subsection (5)(E) for certain areas.

RESPONSE

Subsection (5)(E) requires owners or operators to control emissions from in-plant roads and traffic areas at all times by either watering them, treating them with dust-suppressant chemicals, covering them with a material, or paving them with a cohesive hard surface that is maintained intact and cleaned. If roads are paved, the standard permit requires the roads to be cleaned and provides flexibility in how the owner or operator cleans the roads. These methods represent best management practices for minimizing dust from roads at aggregate facilities and must be used at all times.

In addition, subsection (5)(H) requires that no visible emissions are allowed to leave the plant property for more than a cumulative 30 seconds in duration in any six-minute period. This requirement applies to all equipment at the plant, including the plant roads and stockpiles. Quarterly observations for visible emissions are used to demonstrate compliance with subsection (5)(H). By complying with this requirement, off-property emissions from the roads will be minimized.

COMMENT 67:

SCLSC recommended that TCEQ include the following best management practices. 1) More extensive use of water sprinklers on uncovered stockpiles to reduce and prevent fugitive dust emissions unless a CBP constructs storage sheds to shield stockpiles from wind. 2) Require more cleaning of roads to better reduce and control dust emissions. 3) Require reduced speed limits of 5 mph for new and existing plants to better reduce and control fugitive road dust and fugitive truck dust. 4) Require CBPs to meet a one-half-mile (880 yards) distance as a more protective buffer from local community land uses such as parks, schools, houses of worship, and residences.

RESPONSE

Subsection (5)(F) of the amended standard permit requires that owners or operators use water, dust suppressant chemicals, or cover stockpiles, as necessary to minimize dust emissions. These requirements represent BACT for controlling dust emissions from aggregate stockpiles. This subsection has also been updated to limit the total ground surface area of stockpiles to no more than 1.5 acres, which will help to minimize emissions.

Subsection (5)(E) requires owners or operators to control emissions from in-plant roads and traffic areas at all times by either watering them, treating them with dust-suppressant chemicals, covering them with a material, or paving them with a cohesive hard surface that is maintained intact and cleaned. If roads are paved, the standard permit requires the roads to be cleaned and provides flexibility in how the owner or operator cleans the roads. These methods represent best management practices for minimizing dust from roads and must be used at all times. With respect to SCLSC's comment about speed limits, under the TCAA, the TCEQ does not have the authority to require the permit holder to post speed limits and could not enforce such limits.

Estimated emissions based on the controls required by the amended standard permit were used in the protectiveness review. Compliance with the requirements of the standard permit, including the applicable setback distances specified in subsection (8)(A), is expected to result in emissions that have been demonstrated to be protective.

In addition, the amended CBPSP requires the permit holder to demonstrate compliance with 30 TAC §101.4 Nuisance, which prohibits discharge from any source whatsoever one or more air contaminants or combinations thereof, in such concentration and of such duration as are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property.

COMMENT 68:

Harris County and TRAM recommended that TCEQ require the permittee to post and enforce a speed limit of 5 mph (8 km/h) on facility grounds.

RESPONSE

Under the TCAA, the TCEQ does not have the authority to require the permit holder to post speed limits and could not enforce such limits.

COMMENT 69:

Harris County recommended that TCEQ require all trucks entering and exiting the facility carrying loose material to be covered.

RESPONSE

TCEQ's air permitting program is limited to the control of emissions from stationary sources and does not carry the statutory authority to regulate emissions or loss of material from mobile sources such as trucks as they are driven. Other state and local regulations (such as, but not limited to, Title 7, Subtitle J, Chapter 725 of the Texas Transportation Code) address the covering and/or containment of loose materials being transported by trucks on public roads.

COMMENT 70:

Harris County recommended that TCEQ require a fixed schedule of water sprays for roads and stockpiles to control dust. Harris County also recommended that TCEQ require permittees to designate a paved area of the facility for parking and equipment maintenance to help isolate spills and leaks.

RESPONSE

Water sprays for roads and stockpiles are not the only methods allowed under the standard permit to control dust emissions. Subsection (5)(E) requires owners or operators to control emissions from in-plant roads and traffic areas at all times by either watering them, treating them with dust-suppressant chemicals, covering them with a material, or paving them with a cohesive hard surface that is maintained intact and cleaned. These methods represent best management practices for minimizing dust from roads and must be used at all times. Subsection (5)(F) requires that owners or operators use water, dust suppressant chemicals, or cover stockpiles, as necessary to minimize dust emissions. These requirements represent BACT for controlling dust emissions from aggregate stockpiles. Requiring water sprays to be used on a fixed schedule can be problematic to implement due to the varying climate in Texas with some areas having more available moisture in the air than others. The moisture in the air can also depend on the time of year where some months are wetter than others. The retained moisture in the ground can also vary during the year due to temperature. Therefore, a requirement of a fixed watering schedule is not practical.

Parking areas and vehicle maintenance areas are not considered in-plant roads or traffic areas because significant dust generation is not expected and, therefore, best management practices are not required for these areas. As a result, paving of parking areas and vehicle maintenance areas is not required for CBPs or for other similar industries.

While the TCEQ is responsible for the environmental protection of all media (including water), the TCAA specifically addresses air-related issues. This standard permit would regulate the control and abatement of air emissions only, and therefore issues regarding possible groundwater contamination are not within the scope of this standard permit review. Accordingly, this air quality standard permit review did not include consideration of issues involving water quality or discharge.

It is the applicant's responsibility to secure all permits and authorizations necessary for operation of the proposed plant. The issuance of an air quality standard permit does not negate the responsibility of an applicant to apply for any additionally required authorizations prior to construction or operation, such as a stormwater permit.

This permit does not authorize the discharge of pollution into a body of water. Individuals are encouraged to report environmental concerns, including water quality issues, or suspected noncompliance with the terms of any permit or other environmental regulation by submitting a complaint using one of the methods described at the following link: www.tceq.texas.gov/compliance/complaints. The TCEQ evaluates all complaints received. If the facility is found to be out of compliance with the terms and conditions of its permit, it may be subject to possible enforcement action.

COMMENT 71:

Harris County recommended that TCEQ require the use of a vacuum sweeper to sweep paved areas and for sweeping to occur on a fixed schedule.

RESPONSE

Paving roads is not the only option allowed for controlling emissions from the plant roads. Subsection (5)(E) requires owners or operators to control emissions from in-plant roads and traffic areas at all times by either watering them, treating them with dust-suppressant chemicals, covering them with a material, or paving them with a cohesive hard surface that is maintained intact and cleaned. These methods represent best management practices for minimizing dust from roads and must be used at all times. If roads are paved, the standard permit requires the roads to be cleaned and provides flexibility in how the owner or operator cleans the roads. Requiring the roads to be swept with a vacuum sweeper may limit the cleaning flexibility of the owner or operator and is not the only effective way to clean paved areas.

COMMENT 72:

Harris County recommended that TCEQ require CBPs to use two or more best management practices methods in subsection (8)(G) to prevent tracking of sediment onto adjacent roadways and reduce the generation of dust.

SCLSC recommended that TCEQ require all dust controls in proposed subsection (8)(G). The commenter stated that water sprinklers and other dust suppression methods are typical fugitive dust controls on piles for aggregate and transfer points along aggregate conveyors where they are used and required by air permit special conditions. The commenter stated that TCEQ routinely requires different types of bulk materials handling plants to make extensive use of covered conveyors and water sprinklers at transfer points to keep fugitive particulates under control and provided several examples.

TRAM recommended that TCEQ revise subsection (8)(G) to require use of all four dust tracking prevention strategies, instead of just one of the strategies. Or, at a minimum, the commenter stated that TCEQ should require at least one of either strategy (i) and (iii) which focus on the roads, and at least one of strategy (ii) and (iv) which are focused on the trucks. The commenter stated that this approach would limit dust accumulation on the road more than one single strategy would.

RESPONSE

Subsection (8)(G) applies to tracking of sediment onto roadways. The control methods in subsection (8)(G) are considered best management practices for preventing tracking of sediment onto adjacent roadways from aggregate facilities. Each method alone can be effective at preventing sediment from trucks from being tracked onto roadways. Therefore, the standard permit only requires one of the methods to be used.

COMMENT 73:

Harris County recommended that TCEQ require permittees to install a dust-suppressing barrier as a border around roads, traffic areas, and work areas along any portions of the facility sharing a property line with a residential property, neighborhood, school, or medical facility.

RESPONSE

For roads and traffic areas, the standard permit requires the owner or operator to comply with the distance limitations of subsection (8)(H), or, as an alternative, comply with the fencing or barrier requirements of subsection (8)(I). Either approach should be sufficient to address impacts of dust on adjacent properties, so the permit does not require the installation of fencing or barriers if the distance limitations are satisfied. As a result of comments received, updates were made to requirements in subsection (2)(E),

paragraph (3)(J)(iv), and paragraph (8)(I)(i) regarding maintaining dust suppressing fencing in good working order and keeping records of any maintenance to dust suppressing fencing.

COMMENT 74:

Harris County recommended that TCEQ list circumstances that would trigger a dust control water spray and require facilities to continuously monitor conditions during operational hours. Harris County also recommended that TCEQ require additional dust suppression activities during dry or windy periods.

RESPONSE

Water sprays for roads and stockpiles are not the only methods allowed under the standard permit to control dust emissions. Subsection (5)(E) requires owners or operators to control emissions from in-plant roads and traffic areas at all times by either watering them, treating them with dust-suppressant chemicals, covering them with a material, or paving them with a cohesive hard surface that is maintained intact and cleaned. These methods represent best management practices for minimizing dust from roads and must be used at all times. Subsection (5)(F) requires that owners or operators use water, dust suppressant chemicals, or cover stockpiles, as necessary to minimize dust emissions. These requirements represent BACT for controlling dust emissions from aggregate stockpiles. If water is used to control dust, normally conditions such as dry and/or windy weather will necessitate the use of water. High traffic areas and increased activity on and around stockpiles may also necessitate the use of water. Because conditions leading to dust are highly variable, (including, but not limited to, temperature, wind speed, humidity, soil moisture, soil particle size, etc.) the standard permit allows the owner or operator flexibility to use a variety of methods to control dust emissions, as well as allowing flexibility in the frequency with which those methods are applied, as long as effective control of dust is maintained.

COMMENT 75:

TRAM stated that the addition of best management practices is good, but that the proposed best management practices do not go far enough. The commenter stated that comprehensive best management practices should be included in model runs to determine if they should be included in permitting. The commenter offered a listing of additional recommended best management practices related to air management and control of dust.

RESPONSE

This amendment to the standard permit was conducted to perform an updated AQA, or protectiveness review, in support of the standard permit to address public concern about potential health impacts from CBPs registered under the standard permit. Revisions to the standard permit are a result of the updated AQA and ensure that BACT is being applied while reflecting updated operating requirements, including updated setback requirements. The protectiveness review for the amended standard permit demonstrates that it is protective at the property line and beyond. The best management practices added to the standard permit requirements were not added as a result of the updated AQA but were based on public comment to improve best management practices and to reduce the potential generation of nuisance dust and prevent the tracking of sediment onto adjacent roadways. The commission is not incorporating the additional best management practices suggested by the commenter at this time, as the originally proposed best management practices are expected to be effective at controlling dust and sediment. However, the commission will consider additional best management practices if found to be necessary or appropriate for any future amendments to the standard permit.

COMMENT 76:

Harris County stated that while TCEQ calculated PM₁₀ and PM_{2.5} emission rates for three engine categories, in the protectiveness review TCEQ only used emissions from the middle category (Tier IV Model Year 2014 and earlier). The commenter stated that this might be appropriate or even conservative for a proposed site installing brand new engines, but existing sites that have been in operation for many years that seek renewal of the standard permit may have older engines with higher emissions. The commenter expressed concern about variability of emissions depending on the age of the engine, and that engine certification should be required to ensure projected emissions fall within what was considered in the protectiveness review.

RESPONSE

Under subsection (6)(E) of the amended standard permit, emissions from the engine(s) are limited to no more than 2.61 grams per horsepower-hour (g/hp-hr) of NO_x. A copy of the engine manufacturer's specifications must be kept at the site to demonstrate compliance with subsection (6)(E). In order to comply with the NO_x limitation in subsection (6)(E), an engine would be a newer model that would also have lower PM₁₀ and PM_{2.5} emissions than older engines.

Owners or operators that seek to authorize emissions from engines under the standard permit must comply with all requirements under Section (6). When renewing a registration for an existing plant under the standard permit, according to subsection (3)(F), owners or operators will be required to be in compliance with all requirements of the standard permit by the later of two years from the effective date of the standard permit or on the date the facility's registration is renewed. Therefore, owners or operators will be required to use the newer model engines at existing plants in accordance with subsection (3)(F).

COMMENT 77:

EPA stated that TCEQ should revise condition (5)(H) to require daily visible emissions observations. EPA explained that fugitive dust emissions are one of the biggest complaints that EPA receives and are reported regularly by the public even though not allowed by the standard permit.

RESPONSE

CBPs operating under the standard permit are considered minor sources of emissions. Therefore, the quarterly visible emissions observations required by the standard permit are consistent with other permitted minor sources in Texas, including CBPs authorized under a 30 TAC Chapter 116, Subchapter B NSR permit. Significant fugitive dust emissions would not be expected from CBPs operating in compliance with the provisions of the standard permit.

COMMENT 78:

AGC expressed concern that the proposed permit language does not adequately account for smaller engines that may have lower overall NO_x emissions. AGC stated that they would like to work with TCEQ on possible alternatives to a specific grams per horsepower hour limit. AGC and ZCC also stated that availability of engines capable of meeting the proposed Tier IV standard may be limited due to supply chain issues. ZCC stated that dealers are quoting 24- to 30-month delivery times for new generators. AGC and ZCC suggested that TCEQ phase this requirement in over time, especially since engines are not a significant source in the AQA.

RESPONSE

The nitrogen oxides (NO_x) emission limit in the amended standard permit in subsection (6)(E) is based on the interim Tier IV limit from 40 CFR Part 1039. The limit applies to engines manufactured before 2014 and is less stringent than the limit that applies to engines manufactured after 2014. This limit is consistent with current BACT for Tier IV internal combustion engine standards. The emissions estimates based on this NO_x limit were used in the protectiveness review. As long as the total horsepower of all engines operating at a concrete batch is less than or equal to 1,000 horsepower, the manufacturer specifications demonstrate that all engines meet the NO_x emission limit, and the locations of all the engines comply with the applicable setback distances, the emissions are protective.

The TCEQ appreciates the concern regarding supply chain issues; however, the use of an engine is not required in this standard permit. The applicant has the option to use electrical line power to produce concrete. Additionally, under §116.605(d)(1), the standard permit allows existing facilities two years from the effective date, or the date the facility's registration is renewed (whichever is later) to comply with this amendment; therefore, existing facilities will have time to come into compliance with the NO_x limit.

Owners or operators of CBPs operating under the amended standard permit will be required to comply with the applicable engine limits in the standard permit. No phased-in approach will be available, other than as provided for existing facilities covered by §116.605(d)(1). If a proposed engine(s) cannot comply with the limits in the standard permit, authorization under a 30 TAC Chapter 116, Subchapter B case-by-case NSR permit can be pursued.

COMMENT 79:

An individual and TRAM stated that the proposed standard permit lacks sufficient detail to describe the qualifications and training requirements for observers for EPA Test Method 22. The commenters expressed concern that unqualified personnel at CBPs may be asked to perform the opacity tests for EPA Test Method 22 without the appropriate training. The commenters stated that it is critical that accurate observations are performed by the permitted facility to demonstrate compliance with their standard permit. The commenters recommended that TCEQ add two definitions to the standard permit to describe who is qualified to perform the observations, their required training, and include recordkeeping requirements to document each observer's name and training record.

RESPONSE

Test Method 22 is a visual determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares. This method determines the amount of time, if any, that visible emissions occur during the observation period (i.e., the accumulated emission time). Unlike Method 9, Method 22 does not require that the actual opacity of emissions be determined. Since the Method 22 procedure requires only the determination of whether visible emissions occur and does not require the actual determination of opacity levels, observer certification according to the procedures of Method 9 is not required. Further information regarding Test Method 22 can be found at www.epa.gov/emc/method-22-visual-determination-fugitive-emissions. The observer training requirements for Method 22 are described in Section 2.3 of the method, so it is not necessary to repeat those requirements in the standard permit.

The standard permit requires that observations for visible emissions shall be conducted and recorded quarterly, for a minimum duration of six minutes. Note that these quarterly visible emissions observations are not required to be conducted via Test Methods 9 or 22. However, if visible emissions are observed during the quarterly general observation, then an additional visible emissions observation must be conducted in accordance with 40 CFR Part 60, Appendix A, Test Method 22. The commission is not adding the suggested recordkeeping requirements for Method 22 training, as it is not specifically necessary for a Method 22 observation to be performed unless visible emissions are observed during the initial quarterly observation.

COMMENT 80:

Harris County recommended that TCEQ increase the frequency at which operators are required to conduct visible emissions observations under Method 22 from quarterly to daily and require observations to occur during peak operations.

RESPONSE

Observations for visible emissions are to be conducted during normal plant operations, according to subsection (5)(H). If visible emissions are observed, an evaluation using 40 CFR Part 60, Appendix A, TM 22 (Test Method 22) is to be conducted to demonstrate that visible emissions leaving the property do not exceed a cumulative 30 seconds in duration in any six-minute period. If exceeded, corrective action is required. The observations are conducted quarterly as required by other similarly permitted industries. The TCEQ cannot impose more stringent requirements than other similar industries without a reasonable justification as to why the more stringent requirement is necessary.

COMMENT 81:

The City of Dallas and an individual recommended that to ensure the identification of emission sources and the protection of human health and the environment, each owner or operator should be required to submit a plot plan that clearly identifies: all property lines, emission sources, buildings, tanks, and process vessels and other process equipment in the area in which the facility will be located; and distances to the closest subdivisions, residential properties, public or private schools, place of worship, public parks, outdoor sports or recreational fields, crushing plants, and hot mix asphalt plants.

RESPONSE

The amended standard permit requires in subsection (3)(A) for the owner or operator of any CBP seeking authorization under this standard permit to register in accordance with 30 TAC §116.611, Registration to Use a Standard Permit and to submit a completed, current form PI-1S-CBP, Concrete Batch Plant Standard Permit Registration Application. The PI-1S-CBP requires a plot plan to be submitted with the application. The plot plan must:

- Clearly show a north arrow, an accurate scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two benchmark locations;
- Identify all emission points on the affected property, including all emission points authorized by other air authorizations, construction permits, PBRs, special permits, and standard permits;
- Include a table of emission points indicating the authorization type and authorization identifier, such as a permit number, registration number, or rule citation under which each emission point is currently authorized; and
- Clearly show all distances to other property or structures to demonstrate compliance with all distance, setback, and buffer requirements.

In addition, an area map is also required to be submitted by the PI-1S-CBP form. The area map must be a current map with a true north arrow, an accurate scale, the entire plant property, the location of the property relative to prominent geographical features including, but not limited to, highways, roads, streams, and significant landmarks such as buildings, residences, schools, parks, hospitals, day care centers, and churches.

Furthermore, according to subsection (5)(l) of the standard permit, the owner or operator is required to locate the CBP at least 550 feet from any crushing plant or hot mix asphalt plant. The PI-1S-CBP form requires the owner or operator to represent the distances to any crushing plant or hot mix asphalt plant or confirm that the CBP will not operate simultaneously if less than 550 feet.

Therefore, all the site plan requirements are being met with the amended standard permit through either the plot plan, area map, or PI-1S-CBP form.

COMMENT 82:

An individual stated that the reference to EPA Test Method 22 under General Requirements subsection (5)(H) of the proposed rule should be described as “Appendix A-7 to Part 60 – Test Methods 19 Through 25E” and not as “Appendix A.” The commenter stated that EPA previously aggregated all of the test methods into a “Appendix A,” but this is no longer the case.

RESPONSE

The commission appreciates the comment. The reference in subsection (5)(H) has been updated as suggested.

COMMENT 83:

LSLA stated that the CBPSP should include provisions for management of chemical and petroleum products stored at a ready-mix concrete plant and provided a list of recommended requirements. The commenter's recommendations included, but were not limited to, requirements to designate specific contacts and emergency coordinators; store chemicals in the smallest possible quantities; store chemicals (including admixtures) and fuel in a bundled, covered, and signed area; label chemicals and keep safety data sheets; prepare a spill response plan; provide measures for adequate spill/secondary containment and cleanup; maintain a documented employee training plan and emergency response procedures; provide overfill alarms on storage tanks; breakaway hose connections and emergency shut-off switches at fueling stations; provide security fencing; protect aboveground tanks from impacts using bollards or barriers, etc.

RESPONSE

Concrete is composed of aggregate, cement, dry additives, or supplements such as fly ash, and water. Accordingly, there is no expectation that a CBP would store significant quantities of products or materials that would trigger programs such as Disaster Review. This standard permit does not preclude or exempt any facility from complying with separate federal or state requirements relating to the storage or use of products, or the storage of fuels such as gasoline or diesel on-site. Storage of such products is not authorized under the standard permit and would instead require a separate air permit authorization.

COMMENT 84:

Harris County requested that, for additional clarity, TCEQ rename Tables 1, 2, and 3 as follows:

- i) Table 1: Production Rates & Setback Distances, single site with shrouded mixer truck receiving funnel.
- ii) Table 2: Production Rates & Setback Distances, single site with mixer truck loading enclosed within walls.
- iii) Table 3: Production Rates & Setback Distances, multiple plants at a single site, mixer truck loading enclosed within walls.

RESPONSE

The commission appreciates the comment. The titles of the referenced tables in the standard permit have been revised for clarification, although not exactly as the commenter has suggested.

H. Enforcement and Implementation (Monitoring, Recordkeeping, Inspections, etc.)**COMMENT 85:**

Harris County stated that TCEQ is only authorized to issue a standard permit under THSC, §382.05195 if the standard permit is enforceable and includes adequate provisions for compliance and monitoring. The commenter stated that the standard permit as proposed is unenforceable in several key areas, including the emission reductions associated with washing of sand and aggregate prior to delivery, the lack of a limitation on stockpile footprint, and potential variability in engine emissions unless engine certification is explicitly stated.

LSLA expressed concern that the TCEQ cannot enforce the CBPSP or adequately monitor compliance with its terms. The commenter noted that, by statute (THSC, §382.05195(a)), TCEQ can issue a standard permit if the commission finds that it is enforceable and that the commission can adequately monitor compliance. The commenter stated that historically, the agency has failed to deploy the enforcement or compliance resources necessary to ensure that the impacts of the standard permit are truly standard across communities when the agency is aware of how Harris County lacks residential zoning.

RESPONSE

In response to these and other comments, TCEQ has added a recordkeeping requirement for owners or operators to document that sand and aggregate has been washed prior to delivery and revised the requirements for stockpiles to include a maximum footprint of 1.5 acres. The commenter's concern about possible variation in engine emissions is addressed in response to similar comments about engines in Section G of this response to comments. In response to the commenters' general concerns about enforcement of the standard permit, an investigation of a CBP is typically initiated from on-demand requests. These on-demand requests include response to internal requests related to permitting actions (e.g., site assessments for new construction sites or for relocation of temporary plants), response to information received (e.g., complaints or emission events), or noncompliance follow-up. Investigations also may be more comprehensive in nature to cover permit and regulatory requirements. In addition to state rule requirements, standard permits issued to CBPs include control, monitoring, reporting, and recordkeeping requirements. Investigators review their findings with the operator after the investigation during an exit interview. If the investigation identifies a violation, TCEQ takes appropriate enforcement action to ensure that the violation is corrected.

COMMENT 86:

LSLA stated that as part of ensuring compliance with the CBPSP, TCEQ needs to monitor emissions in residential communities near multiple or larger CBPs like in Houston Gardens, Fifth Ward and Deforest. DHCC stated that there are no air monitors near their area (the nearest is miles away).

RESPONSE

Due to cost and logistical constraints, the placement of ambient air monitors is prioritized to provide data on regional air quality in areas frequented by the public. The existing air monitoring network is the result of a strategic balance of matching federal monitoring requirements with state and local needs. Consistent with federal air monitoring requirements, TCEQ evaluates the placement of air quality monitors within the air monitoring network using trends in population, reported emissions inventory data, and existing air monitoring data for a given area. In addition, TCEQ may prioritize monitor placement in areas with potential regional air quality issues.

TCEQ annually evaluates the number and location of air monitors within its network to assess compliance with federal monitoring requirements and the adequacy of monitoring coverage for identified monitoring objectives as a part of the Annual Monitoring Network Plan provided to EPA on July 1 of each year. This plan is made available on the TCEQ's website for public review and comment for 30 days beginning in mid-May. Requests for additional monitoring or the identification of additional monitoring needs may be made during this public comment period and will be considered along with other monitoring priorities across the state. To receive email announcements related to the ambient air monitoring network, including the availability of the Annual Monitoring Network Plan for public review and comment, please visit the following link service.govdelivery.com/accounts/TXTCEQ/subscriber/new and select "Air Monitoring Network Announcements."

Since stationary air monitors are sited to measure air quality that is representative of a broader area or region, monitors are not typically placed to measure the impacts from specific industrial facilities.

COMMENT 87:

Several commenters (City of Dallas, EPA, Public Citizen, TRAM, Nikolaos Ziropiannis, an individual) recommended that TCEQ require a fence-line PM_{2.5}/PM₁₀ monitoring program for CBPs to evaluate PM emissions leaving the plant site. Some commenters recommended such a program for all CBPs, and some recommended it particularly for sites adjacent to residential areas, schools, places of worship, or businesses. Certain commenters noted that PM sensors are now readily available, reasonably inexpensive, and can be operated and maintained without expertise. Certain commenters recommended that CBP owners or operators or TCEQ make the monitoring data publicly available.

RESPONSE

Fence-line monitoring is not typically required unless a facility has a confirmed compliance issue that demonstrates a need for monitoring as part of a corrective action program or is known to emit one or more pollutants that are of unusually serious concern to surrounding or nearby residents. The TCEQ is not adding a requirement for fence-line monitoring at this time, but as the TCEQ continues to evaluate this industry sector, the executive director will consider the appropriate means to demonstrate compliance for any future rulemakings.

COMMENT 88:

Harris County recommended that TCEQ require annual training for both managers and employees regarding permit compliance requirements, specifically including housekeeping requirements and procedures. In addition, the commenter recommended that TCEQ require the annual training to be conducted in an alternative language if employees are Limited English Proficient. The commenter recommended that TCEQ require the permittee to maintain records of all manager and employee training.

LSLA stated that TCEQ could provide training to operators to ensure their awareness of these new limitations starting in 2024 and require operators' attendance.

LSLA stated that TCEQ should require CBPs to develop an employee training program that includes review of MSDS terminology and location; review of storage locations for chemicals and petroleum products; written safety and handling requirements for chemicals and petroleum products; review of locations for spill response and personal protective equipment; and a written emergency contact list in the event of a spill.

RESPONSE

The executive director encourages and expects owners and operators of CBPs to provide training they deem appropriate for their employees to ensure the facility is operated in compliance with the standard permit and the rules of the TCEQ. However, the content of such training may need to be tailored by the owner or operator for the experience level of the employees, language considerations, and site-specific circumstances. The executive director will take this recommendation into consideration for any future amendments to the standard permit. Since the amended standard permit does not specifically require owner or operator training, TCEQ is not including a recordkeeping requirement for training. It would not be appropriate to require recordkeeping in association with practices that are not a requirement of the standard permit.

COMMENT 89:

TACA stated that it is unclear how existing plants will continue to comply with their existing standard permits pending the revisions and requested that TCEQ provide clarification.

TACA requested that TCEQ confirm, as it concerns existing plants, that subsection (3)(E) is only impacting "new" or "modified" sources. The commenter asked for guidance on when existing plants that are not modified (i.e., have no production increase, have no new equipment – i.e., silos, tanks, engines or storage bunkers for sand and aggregates) must conform to the requirements of the new permit. Specifically, the commenter asked that TCEQ confirm that "renewals shall comply with this standard air permit on the later of (1) two years from the effective date of the permit (e.g., potentially January or February of 2026) or (2) when the date of the facility's permit is required to be renewed, whichever is later."

AGC expressed concern that there could still be operations that will not be able to achieve compliance with the proposed new controls as presently configured. The commenter urged TCEQ to consider providing an alternative means of compliance whereby an applicant can make a demonstration using actual ambient air quality monitoring data or modeling showing that it will not have an adverse impact on air quality.

RESPONSE

Existing facilities will be required to comply with the amended standard permit according to the requirements of 30 TAC §116.605(d)(1). Specifically, compliance is required by the date the facility's registration to use the standard permit is required to be renewed or within 24 months of the standard permit amendment, whichever is later.

A standard permit is intended to cover non-major facilities which are generally similar in nature, but a standard permit may not cover every individual case. Standard permits are not intended to be used for situations needing a detailed site-specific evaluation as suggested by the commenter. If an existing CBP operation is not able to become compliant with the amended standard permit within the required timeframe, or if a new facility is for some reason unable to qualify for the amended standard permit, that facility will be required to obtain a Chapter 116 Subchapter B case-by-case NSR permit or cease operation.

COMMENT 90:

LSLA expressed concern about TCEQ's ability to ensure compliance with the new permit terms and ensure widespread adoption of the new requirements by the industry. The commenter provided a series of suggestions relating to rollout and implementation of the amended standard permit.

LSLA recommended that TCEQ offer outreach and training through its small business program designed for CBP operators and owners to learn about the new pollution controls, setbacks and production limits required in the 2023 Amendment. The commenter also stated that TCEQ should consider making attendance at such training required as part of the application or renewal process for the standard permit.

AGC requested that TCEQ obtain from Harris County information on common issues they have allegedly identified at CBPs. AGC stated that they would support TCEQ developing compliance assistance tools describing common violations and how they can be avoided. AGC expressed agreement with comments made at the informational meeting that TCEQ should conduct outreach and education on the new requirements of the CBPSP.

RESPONSE

TCEQ's Air Permits Division will provide workbooks and/or checklists for standard permit applicants that provide a detailed breakdown of the amended permit requirements. In addition, TCEQ will develop compliance assistance tools and conduct outreach on the new requirements once this standard permit is in effect. Additional information will be posted on the TCEQ website when it is available. Owners or operators of CBPs may always contact the TCEQ Air Permits Division Mechanical/Coatings Section if they have questions about the standard permit or contact the applicable TCEQ Regional Office if they have questions or concerns about compliance.

COMMENT 91:

EPA and an individual encouraged the inclusion of a requirement that all CBPs must be inspected through unannounced inspections by TCEQ or the local air control agency at regular intervals (at least every 24 months) to ensure compliance. EPA stated the inspection should evaluate the condition of barrier fencing, shrouding, roads, equipment operation, and compliance with any other best management practices employed at the facility. EPA stated that inspectors should review the complaint history (if relevant) with the operator and discuss what actions have been taken to ensure they are operating in a manner to reduce complaints from the community.

The City of Dallas stated that TCEQ should ensure compliance with the permit by conducting a compliance inspection of each permanent batch plant every other year and any batch plant (permanent or temporary) upon request by stakeholders. The commenter stated that the City of Dallas is willing to work with TCEQ and City stakeholders to ensure efficient community engagement, including an easy-to-use website that allows residents to submit a compliance review request.

RESPONSE

The State of Texas contains many thousands of sources of air, water, and waste pollution. TCEQ's 16 Regional Offices distributed throughout the state are responsible for conducting investigations and evaluating complaints associated with these facilities. For monitoring compliance with air permits, TCEQ conducts regular investigations of facilities that are major sources of air pollution. This approach allows TCEQ to apply resources to the sources that pose the highest risk to human health and the environment and fulfill obligations related to TCEQ's delegation of federal air permitting programs for major sources.

An investigation of a CBP is typically initiated from on-demand requests. These on-demand requests include responses to internal requests related to permitting actions (e.g., site assessments for new construction sites or for relocation of temporary plants), responses to information received (e.g., complaints or emission events), or noncompliance follow-up. Investigations also may be more comprehensive in nature to cover permit and regulatory requirements. In addition to state rule requirements, standard permits issued to CBPs include control, monitoring, reporting and recordkeeping requirements. Investigators review their findings with the operator after the investigation during an exit interview. If the investigation reveals a violation, TCEQ takes appropriate enforcement action to ensure that the violation is corrected.

Individuals are encouraged to report any concerns about nuisance issues or suspected noncompliance with the terms of any permit or other environmental regulation by submitting a complaint using one of the methods described at the following link: www.tceq.texas.gov/compliance/complaints.

COMMENT 92:

LSLA stated that, beginning in February 2020, Harris County Pollution Control Services (HCPCS) has investigated 122 batch plants and sent 144 notices of violation. The commenter stated that, in contrast, TCEQ only has four currently pending enforcement actions against CBPs in the entire state. The commenter also stated that a review of TCEQ administrative orders since 1998 revealed a limited number of enforcement cases against concrete mixing or crushing facilities. The commenter stated that this suggests that TCEQ is unable to adequately monitor compliance with the CBPSP on a state-wide basis, much less in Harris County, and that this failure causes the impacted communities to suffer preventable increases in PM in their neighborhoods. The commenter stated that CBP facilities are almost never cited by TCEQ despite community complaints and testimonies regarding large plumes of dust leaving the property line, which is a clear violation of the standard permit. The commenter also stated that HCPCS does not even receive many complaints from TCEQ to investigate until days after they are reported to TCEQ.

LSLA stated that if TCEQ does not have the manpower to inspect CBPs throughout the state to ensure compliance with the CBPSP, it needs to be prepared to delegate this authority to local authorities and make referrals to local government inspectors timely so that the conditions generating the complaint are still likely to exist at the time the complaint is referred. For example, the commenter stated that when TCEQ does not inspect a facility or refer a complaint for 2-3 days, it is unlikely that the conditions generating that complaint will still exist at the time of the inspection.

LSLA stated that TCEQ needs to inspect these facilities or delegate the authority to do so to local regulators to ensure compliance with these new permit terms and setbacks.

RESPONSE

As explained in previous responses, TCEQ does not have adequate investigative resources to conduct investigations at a set frequency for all CBPs, which are not major sources. An investigation of a CBP is typically initiated from on-demand requests. These on-demand requests include responses to internal requests related to permitting actions (e.g., site assessments for new construction sites or for relocation of temporary plants), responses to information received (e.g., complaints or emission events), or noncompliance follow-up. TCEQ refers complaints to the appropriate local jurisdiction, such as HCPCS. If there is not a local agency, TCEQ investigators in the 16 regional offices will conduct the investigation. TCEQ's regional offices work to refer complaints to local jurisdictions in a timely manner in accordance with our policies and procedures. The regional offices refer complaints the same day of receipt or the next business day, at the latest. While the condition generating the complaint may no longer exist, an investigation is still conducted to determine if there is a violation of applicable rules or standards.

Investigations initiated based on complaint allegations are unannounced. The majority of complaints submitted to TCEQ regarding CBPs consist of emission or dust allegations. During a complaint investigation, the operation of a CBP is typically observed from an off-property location for potential dust emissions. The roadways entering and leaving a site are also observed for dust accumulation. Dust emissions typically result from poor or lack of dust mitigation practices, such as roadways not being cleaned or maintained on a regular basis, stockpiles not being covered or sprayed, and/or stockpiles exceeding the height of the bunker walls. If dust emissions are observed, an on-site investigation is conducted to determine compliance with operational and recordkeeping requirements. Investigators review their findings with the operator after the investigation during an exit interview. If the investigation reveals a violation, TCEQ takes appropriate enforcement action to ensure that the violation is corrected.

COMMENT 93:

LSLA stated that TCEQ should require at least one unnoticed inspection by TCEQ staff of the CBP before the permit is renewed. The commenter stated the inspection report should be included in the decision packet associated with that renewal for the facility reviewed by the Commission or the executive director.

LSLA recommended that TCEQ prepare a physical inspection of the CBP to inspect and review existing facilities in advance of any upcoming renewal process for a CBP facility, to troubleshoot concerns over compliance with the new requirements under the 2023 Amendment.

RESPONSE

TCEQ does not have a requirement to conduct physical inspections of all CBPs (or any other type of facility) at initial authorization and renewals. TCEQ does not have the investigative resources to conduct these types of reviews at a set frequency for all CBPs, or in association with every standard permit renewal.

The agency uses compliance history when preparing draft permits and when deciding whether to issue, renew, amend, modify, deny, suspend, or revoke a permit. Written notices of violation, and final enforcement orders are included components in compliance history.

COMMENT 94:

LSLA recommended that TCEQ make a plan to inspect facilities timely if the agency receives public complaints and have these complaints reflected in the operator's compliance history. The commenter stated that, if TCEQ fails to inspect, then this information about the operator's compliance (or noncompliance) with the permit is not included in the public record and thus is missing from the compliance history when the facility comes up for renewal.

RESPONSE

Complaints received by the agency are prioritized according to the individual characteristics of the event and its potential impact on human health, safety, and the environment. If there is a local jurisdiction, the TCEQ will refer the complaint. For areas without a local jurisdiction, complaints are addressed as soon as possible, within the assigned priority deadline. Any written notices of violation or final enforcement orders resulting from complaint investigations are included in the facility's compliance history calculation. If no violations are documented during a complaint investigation, that investigation is not used in the calculation of compliance history rating.

In regions where a local air program has been delegated responsibility for responding to complaints in their areas, the referred complaint is entered into the TCEQ database and is included in the compliance history calculation accordingly.

COMMENT 95:

LSLA stated that, for facilities with multiple violations or complaints, TCEQ should require that facility to adopt more pollution controls, conduct more frequent unnoticed inspections, and conduct records reviews for that facility at least every 12 months to ensure compliance with the annual emissions limitations.

LSLA stated that CBP facilities with multiple complaints should trigger automatic, unnoticed inspections by TCEQ at least yearly or, at the minimum, an annual records review.

RESPONSE

When violations are cited, a noncompliance follow-up investigation is conducted in-house or on-site to review or observe measures taken to achieve compliance. TCEQ takes appropriate enforcement action when repeat violations occur. Actions include issuing an order requiring the facility to correct the problem and assessing a fine against the facility. TCEQ does not have adequate investigative resources to conduct investigations at all CBPs at a set frequency.

COMMENT 96:

LSLA recommended that TCEQ require CBP operators to report monthly their annual production (on a rolling 12-month period) to ensure compliance with production limits in the 2023 Amendment. While TCEQ requires a CBP facility to maintain records, if TCEQ never looks at the records on a regular basis, there is no way to confirm there is compliance with this new limitation. The commenter also stated that the 2023 amendment specifically requires the operator to maintain a record of production rate for hourly and annual operations to meet the limitations in Section 8(A) of the CBPSP. The commenter stated, to verify this compliance, the CBP operator could simply submit an online form monthly to the agency to confirm that its production was below the annual operations limit (on a rolling 12-month period). The commenter stated that this would provide a record that the public could request and confirm adherence to the production limits. The commenter also stated that for co-located facilities, the CBP operators should have to report their collective production limits to ensure compliance. The commenter suggested that the permit likely does not comply with THSC, §382.05195(a).

RESPONSE

TCEQ does not have a regulatory mandated reporting frequency for CBPs. TCEQ's air quality standard permits have typically relied on recordkeeping, rather than reporting, as the primary mechanism for monitoring and documenting compliance with the permit conditions, except in cases where there is a failure of emission control or monitoring equipment, or another cause of excess emissions. The use of recordkeeping (as opposed to reporting) to determine compliance with the production limits of the amended standard permit is consistent with the prior CBP standard permit and standard permits for similar sources. TCEQ does not agree that this approach hinders or prevents TCEQ from monitoring compliance with, and enforcing the terms of, the standard permit as required by THSC §382.05195(a).

Monitoring and recordkeeping requirements are included in the CBPSP. Operators are required to keep written records on-site for a rolling 24-month period to include production rate for hourly and annual operation to demonstrate compliance. Records must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction. The Regional Office may perform investigations of the plant. The investigation may include an inspection of the site including all equipment, control devices, monitors, and a review of all required recordkeeping.

COMMENT 97:

EPA asked if the requirement for sand and aggregate to be washed prior to delivery to the facility would be consistently achievable. EPA also asked, as a practical matter, if TCEQ obtained any data on the availability of prewashed sand or aggregate, and what assurance can be made to verify that each load of sand and aggregate received has been washed prior to delivery. EPA also asked what degree of washing should be performed, and whether there is a minimum number of screens to be used by the aggregate wash plant and a maximum screen size. EPA asked how TCEQ will enforce the requirement to obtain prewashed aggregate and suggested that the standard permit include explicit recordkeeping requirements to assist or support that enforceability.

Public Citizen asked how owners/operators would verify with their suppliers that incoming sand and aggregate has been washed to comply with subsection (5)(L). The commenter asked, if they find that a deliverer is not washing, would that be reported to TCEQ? The commenter asked if this washing would be independently verified or accounted for.

Harris County stated that, to support the critical assumption of 95% control from washing of material prior to delivery, a recordkeeping requirement should be added to subsection (3)(J) to ensure that the requirement for all sand and aggregate to be washed prior to delivery is enforceable.

RESPONSE

CBPs that are providing concrete for TxDOT and other projects where specific standards must be met on aggregate (aggregate includes coarse and fine specifications and crushed concrete) particle sizes are required to use washed aggregate in the concrete mixtures. As a result, CBPs typically only use washed aggregate in their concrete mixtures, and it is usually not necessary to verify or enforce that each load of sand and aggregate received has been washed prior to delivery. However, in response to this and other comments, TCEQ has added a requirement under subsection (3)(J) to require owners or operators to maintain records to demonstrate compliance with the requirement that sand, and aggregate has been washed prior to delivery to the site.

The washing and testing for fines will be conducted at a wash plant prior to delivery to the CBP. Washing the aggregate takes out most of the smaller particles (fines) of silt and clay. A sieve analysis using U.S. Sieve No. 200 (74 microns) on the washed material determines how much of the silt the material still holds. A typical No. 200 sieve analysis on washed material will indicate that less than 1% of the total material tested will pass through this screen, and often the results are less than 0.5% passing through the screen. Further sieve testing of the same material using a smaller No. 270 sieve size (53 microns) determined that only 0.1% of the washed material is less than 53 microns in diameter.

COMMENT 98:

Harris County stated that, as proposed, the best management practices in proposed paragraph (8)(G)(iv) for control of off-site tracking of sediment lack enforceable language and should be revised to change the term "should" to "shall."

RESPONSE

The phrasing of paragraph (8)(G)(iv) has been modified as requested.

COMMENT 99:

LSLA stated that TCEQ should improve monitoring requirements under the CBPSP and require the following:

- Review and monitoring of potential dust sources and control & mitigation measures on regular basis, both on and off site, to ensure no migration of dust. Monitoring will check for visible signs of dust emissions and deposition originating from site.
- Regular reviews of mitigation methodology to be undertaken by Environmental Manager and Project Manager for site.
- Regular evaluation of compliance history and violations for problematic or poorly sited CBPs and consideration of rescinding permits for facilities that are regularly out of compliance.
- Increased oversight and review of a CBP's deviations from the CBPSP.

RESPONSE

All owners or operators are required to control emissions and meet the standard permit performance standard of no visible emissions exceeding 30 seconds in any six-minute period. No visible fugitive emissions shall leave the property. Observations for visible emissions shall be performed during normal plant operations and recorded quarterly. Records of the quarterly observations must be made available at the request of representatives of the TCEQ and are reviewed during investigations. Operators are also required to document, and report excess visible emissions. TCEQ reviews these incidents. The agency uses compliance history when making decisions regarding the issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit. As TCEQ continues to evaluate this industry sector, the executive director will evaluate the appropriate means to improve monitoring requirements and demonstrate compliance for any future rulemakings.

COMMENT 100:

AGC stated that TCEQ should explain that the air quality monitors around the state actually show that ambient air quality meets the health-based NAAQS for PM_{2.5}.

RESPONSE

TCEQ confirms that, based on data from the Texas ambient air monitoring network, all counties in Texas are currently designated as "unclassifiable/attainment" for the current PM_{2.5} NAAQS. No Texas counties are designated nonattainment for the standard.

COMMENT 101:

The City of Dallas stated that owners or operators should be required to sufficiently illuminate the facility during nighttime operations to better ensure compliance with permit terms, including terms related to the operation and maintenance of fabric or cartridge filters, transferring cement/fly ash, controlling emissions from in-plant roads, and tracking sediment onto adjacent roadways.

RESPONSE

The TCEQ does not specify requirements for facilities regarding illumination. Unless a compliance issue exists, the TCEQ cannot require more stringent requirements for an industry, including illumination during nighttime operations, than other similarly permitted industry types. CBPs operating under the standard permit will be required to comply with the standard permit terms at all operating times. If providing sufficient illumination proves necessary to comply with requirements, the decision would be up to the company to provide the illumination.

COMMENT 102:

AGC expressed opposition to any provision that would require operators to post operating records online for compliance monitoring or any other purpose. AGC stated that TCEQ has adequate tools through its complaint, investigation, and enforcement processes to address noncompliance. AGC stated that no other industrial sector is required to post such information, and CBPs are a minor source of emissions.

RESPONSE

The executive director appreciates the comment and agrees that, for this standard permit, online compliance monitoring to be provided by operators is not warranted or necessary. However, any regulated entity with reportable opacity/emissions events that exceed the limits listed in 30 TAC §101.201 (Emissions Event Reporting and Recordkeeping Requirements) is required to report the event to the TCEQ via STEERS no later than 24-hours after discovery.

COMMENT 103:

EPA and an individual requested that TCEQ include a requirement that owners or operators of CBPs notify TCEQ within 30 days of ceasing operations so that the permit can be voided. EPA stated that this issue was highlighted in the Sunset Advisory Commission Report, which stated "Trying to establish which concrete batch plants are still active when performing inspections wastes staff time and effort. Without updated data on which regulated entities are currently in operation, TCEQ field staff cannot establish accurate inspection schedules, and members of the public do not have access to reliable information about regulated activity in their area."

RESPONSE

As part of TCEQ's Sunset review, an annual reporting requirement for temporary permits and permits with an indefinite term was included in Senate Bill 1397, 88th Legislature. CBPs that frequently move locations are temporary and must receive authorization to move. However, companies do not always request the previous authorization to be voided. This new annual reporting requirement should provide updated information to the executive director and the public. The commission is currently working on implementation of this requirement and the first reporting deadline is December 31, 2024.

I. Public Participation, Standard Permit Amendment Process

COMMENT 104:

TACA requested confirmation that TCEQ extended the comment period to account for the interest in concrete batch plants from public. The commenter recommended a further extension to the comment period to ensure all stakeholders (industry, public, local government, elected officials, etc.) have the opportunity to evaluate proposed amendments and how they could be improved. The commenter also requested that TCEQ remind the public or other interested parties that TCEQ will accept additional public comments before the new permit is actually adopted by the commission.

RESPONSE

TCEQ provided an extended, 60-day comment period (as opposed to the minimum 30 day comment period required by rule) to ensure that all interested persons and groups had ample time to review the proposed changes and provide comment. A further extension to the comment period would have delayed implementation of the proposed amendments and would have unlikely resulted in additional substantive comments. Interested persons have the opportunity to register to speak in support or opposition to the amended standard permit when considered for adoption at Commission Agenda.

COMMENT 105:

EPA expressed appreciation that TCEQ provided an extended comment period and performed additional public outreach in Harris County. LSLA expressed appreciation that TCEQ provided an extended comment period.

RESPONSE

The commission acknowledges that public participation is an integral and important part of the rulemaking and standard permit amendment process and is pleased that the commenters recognize the efforts and improvements that TCEQ is making in this area.

COMMENT 106:

Harris County expressed appreciation that TCEQ provided an extended comment period, an informational meeting in Houston, and the posting of supporting documents on the TCEQ website. However, the commenter stated that the standard permit text should have been made available in Spanish. The commenter stated that by only providing the proposed amendments in English, TCEQ excluded Limited English Proficiency (LEP) Harris County residents from the amendment process. The commenter presented data showing that 27% of CBP facilities in Harris County are sited in zip codes where LEP people make up 20% or more of the population. The commenter also stated that providing the permit in Spanish could enhance compliance because there are a significant number of Spanish-speaking CBP operators.

RESPONSE

Public participation is an integral and important part of the standard permit amendment process. As such, notice of the standard permit amendment was published in the *Texas Register*, as well as English and Spanish newspapers of general circulation in Houston, Dallas, Austin, and San Antonio. Translators were available at three stakeholder meetings, the public meeting, and informational meeting. The TCEQ also created a webpage, in both English and Spanish, with details of the process, how to comment, meeting dates, and access to the permitting documents. No requests for translation of any of the standard permit documents were received during the public comment period. The TCEQ is committed to public engagement and continues to evaluate how to better serve LEP communities and what information should be translated.

COMMENT 107:

Senator Miles recommended that TCEQ allow large counties and certain municipalities to weigh in on permits (for example, Senate Bill 1350, 87R, requiring local approval of a permit or site by a local city council or county commission).

RESPONSE

The commission appreciates the comments, but these issues are outside the scope of the proposed amendment. Current public participation rules allow large counties and municipalities to comment on permit applications.

COMMENT 108:

Senator Miles stated that TCEQ needs to adopt a clear and uniformly applicable standard for who is an affected person (for example Sunset Advisory Committee Staff Recommendation I.I, directing TCEQ to develop guidance on how TCEQ applies the current factors in rule to determine who is an affected person).

RESPONSE

The commission appreciates the comments. These issues are currently undergoing Sunset implementation efforts. Rules regarding affected person status are currently located under 30 TAC §55.203.

COMMENT 109:

Harris County and LSLA stated that, due to technical issues, TCEQ failed to provide an adequate forum for meaningful public participation at the May 18, 2023, formal hearing on the 2023 amendment. Harris County and LSLA noted that during this in-person and virtual event, only speakers that appeared in person were able to provide formal comments on the record and ask questions of TCEQ staff due to technical difficulties with the audio. The commenters stated that speakers that registered to participate virtually were unable to make formal comments or participate. LSLA stated that because of these technical difficulties, the public was denied meaningful participation at this hearing, and that TCEQ needs to re-notice a formal hearing on the 2023 amendment and extend the comment period so that the public may submit comments at the hearing.

RESPONSE

The commission regrets the technical difficulties that affected the ability of virtual participants to hear the discussion or make formal comments orally. However, attendees were able to submit written comments, as well as comments in the chat at the virtual meeting. After the May 18, 2023, public meeting there was still ample time (more than three weeks) remaining in the comment period for interested persons to contact staff through conventional means and ask questions or submit comments in writing. TCEQ also held an informational meeting in Houston on May 22, 2023, specifically at the request of stakeholders.

COMMENT 110:

Harris County stated that the date and time of the May 22, 2023, informational meeting in Harris County were not included in the official TCEQ public notice, and that TCEQ did not accept public comment on the proposed standard permit at the meeting. The commenter stated that TCEQ's decision to not accept public comment at the meeting was a source of frustration for the attendees. The commenter stated that the end result was that the only interested persons who were able to submit oral comments are those that attended the Austin meeting in person. The commenter requested that TCEQ provide another public meeting that allows for oral comments, both in-person and virtually.

TACA requested that TCEQ allow formal comments to be made at the informational meeting in Houston on May 22, 2023. The commenter suggested that TCEQ could collect written or typed comments at the meeting even if transcribing oral comments was too costly.

LSLA stated that they appreciated the opportunity for an informational meeting in Houston but would like the opportunity for community members to give formal comments at that May 22, 2023, meeting (either in writing or orally). The commenter stated that given the technical difficulties with the Austin hearing, the formal comment period and opportunity to provide formal comments should be extended to people in Houston that were unable to travel to Austin.

RESPONSE

Rules governing the proposal or amendment process for standard permits require only one public hearing be held during the 30-day comment period. Due to the public interest in this standard permit amendment, the executive director also held an informational meeting. The purpose of the informational meeting was to give the community an opportunity to ask questions about the amendment process to TCEQ staff. The informational meeting was not able to be scheduled until after the formal notice of the public meeting had been submitted for publication, but as soon as the date, time, and location of the informational meeting were finalized, that information was posted on the TCEQ standard permit website and TCEQ public calendar.

The informational meeting was held on May 22, 2023, well before the end of the comment period. Although public comments were not orally accepted at the informational meeting, comments could still be submitted through TCEQ's e-comments system, or by postal mail, until the close of the comment period, which was extended an additional 30 days to June 14, 2023. In addition, the presentation given at the informational meeting explained how comments could be submitted up until the close of the comment period.

COMMENT 111:

An individual stated that newspaper notices are no longer an effective resource if used as the sole method for communicating public notices for permits, as not all residents can afford a subscription. The commenter stated that online notices are more effective, but not everyone has reliable internet access. Therefore, the commenter recommended that TCEQ utilize other potentially more effective forms of notification, e.g., notifications through the postal mail service. The commenter noted that every home receives mail and there is no direct cost to the homeowner to receive mail. The commenter stated that TCEQ should require that facilities send out a mass mailer informing communities of any proposed CBP operation, and that the mailer could be done through the USPS presorted standard mail option to every home in the zip code in which the CBP is to be located. The commenter stated these options would ensure that every person that could potentially be affected by the operation of the CBP would be notified of the proposed facility and of their opportunity to participate in the public comment process. The commenter also stated that if a public meeting or hearing is held, a subsequent mass mailer should also be done notifying them how they can participate in English and Spanish.

RESPONSE

The public participation process for standard permit authorizations consists of many diverse avenues for informing the public of requested authorizations. These are all outlined in 30 TAC Chapter 39, and include sign posting in English (and if applicable in an alternative language) along roads, highways and streets that border the site, publishing within a newspaper of general circulation in the municipality that the facility is located (and if applicable in an alternative language newspaper general circulation in the municipality that the facility is located), a copy of the permit application is required to be placed at a public viewing place within the county, and the TCEQ webpage lists both a plain language summary (in English and applicable alternative language) as well as a copy of the consolidated notice (in English and applicable alternative language). Federal, state and local officials including State Representatives and Senators, mayors, county judges, and health authorities, are notified when an application within their jurisdiction has a notice issued. Further, public meetings, if granted and governed by 30 TAC Chapter 55, allow for the public to provide oral and written comments at the meeting or online, by fax, hand delivery, or the mail anytime during the comment period. If comments are received regarding a proposed authorization, those comments are responded to in a formal response to comments (RTC) document (in English and if applicable an alternative language) that is both posted to the TCEQ Chief Clerk's Webpage and notice of the availability of the RTC is mailed to all commentors and those individuals requesting to be added to the mailing list. Because registrations for this standard permit are subject to the rules listed within 30 TAC Chapter 39 and a potential public meeting is subject to 30 TAC Chapter 55, a change in method of public notice and public meeting would require revisions to those chapters, which would be outside the scope of this amendment to the non-rule standard permit. In addition, many aspects of the public notice process are set by statute and would require legislative action to change.

COMMENT 112:

AGC stated that TCEQ should take this opportunity to allay public concerns and establish a clear and holistic record through this administrative action. AGC urged TCEQ to provide more context and information related to CBPs and their relative risk to human health and the environment.

RESPONSE

For this action, TCEQ has made available to the public as much information as possible about emissions from CBP facilities, the representation of these emissions and sources in TCEQ's modeling, TCEQ's evaluation of risks to human health and the environment, and the scope of TCEQ's authority to regulate emissions from CBP operations through air permitting. CBPs are minor sources that emit PM as the primary air pollutant, mostly from the movement and storage of materials used to make concrete (sand, gravel, cement, fly ash). Emissions may also occur from diesel-powered generator engines at some sites that do not have access to line power for electricity. Health effects from exposure to PM are dependent on the size of the particle. Particles that are less than or equal to 2.5 μm in diameter (called PM_{2.5}) are the particles of the greatest toxicological concern. Less than 20% of the particles emitted from CBPs fall into this category and are small enough to enter the lower part of the respiratory tract where oxygen enters the blood stream.

COMMENT 113:

The City of Dallas stated, in the Temporary Concrete Plants Relocation Requirements, Section (10), the permit should require public notice of the relocation of a temporary batch plant and an opportunity for residents to seek a public hearing if emissions sources are 1,650 feet from subdivisions, residential properties, public or private schools, place of worship, public parks, outdoor sports or recreational fields, crushing plants, and hot mix asphalt plants. As previously stated, batch plants are significant sources of fugitive emissions that threaten the health and environment of our communities. At minimum, local and state entities should be responsible for providing residents with proper notice and opportunity to comment prior to relocation.

RESPONSE

Temporary concrete batch plants referred to in Section (10) of the standard permit apply to requirements in 30 TAC §116.178, Relocations and Changes of Location of Portable Facilities and are not subject to public notice requirements if the requirements listed in the rule are met. Revisions to 30 TAC §116.178 would be necessary to implement the commenter's request, and making such a change is outside the scope of this standard permit amendment project.

COMMENT 114:

An individual stated that it is absolutely imperative that people living close to and next to a CBP have input into the permitting process. The commenter stated that they are the ones who will be living with the health and property value consequences of such a plant.

RESPONSE

Persons who are concerned or interested in a specific registration for a proposed CBP may provide comments during a 30-day comment period and may request a public meeting or a contested case hearing. To request a contested case hearing, a person must reside in a permanent residence within 440 yards of the proposed facility, but any person can submit public comments or request a public meeting regardless of their distance to the proposed facility. Note that CBPs located temporarily in the right-of-way, or contiguous to the right-of-way, of a public works project are not subject to these notice and hearing requirements. With respect to the health concerns described by this commenter, as discussed in detail elsewhere in this response to comments, TCEQ conducted a protectiveness review to ensure emissions from facilities authorized by the standard permit are protective of human health and the environment. A protectiveness review is a demonstration using air dispersion modeling to evaluate the potential impacts of the proposed operation as represented in the standard permit. The results of the air dispersion modeling, based on using the maximum production limits represented in the standard permit, were used to develop setback distances between facilities at the CBP and the nearest property line for different regions of the state. The results of the protectiveness review demonstrate that the standard permit is protective at the property line and beyond. As to the commenter's concern about property value, TCEQ does not have the authority to consider or regulate property value effects as part of the air permitting program.

COMMENT 115:

EPA asked if TCEQ would be referencing the proposed definition for "setback distance" when making determinations on affected person status under THSC §382.058(c). EPA expressed concern that the point within the CBP used for determination of the 440-yard radius is not consistent from project to project, nor is it consistent between the TCEQ Executive Director and the TCEQ Office of Public Interest Counsel (OPIC). EPA noted the case of the Rhino Ready Mix LLC CBP. See TCEQ Docket No. 2021-1465-AIR. EPA stated that clarifying how the agency measures distance would provide more transparency and clarity on determinations of a person's rights before the commission.

RESPONSE

The executive director determines affected party status. The executive director considers the appropriate measurement to determine an affected person for a CBP application to be from the outer edge of any pollution producing facility (note that pursuant to state law this does not include roads or parking lots) to the residence. Stockpiles and other air contaminant producing facilities are included and should be noted on plot plans and the TCEQ regional office representative's measurements. The executive director and the TCEQ Office of Public Interest Counsel are not equivalent; they are different in purpose and practice.

COMMENT 116:

CHHD stated that they would like to see an expansion of the ability of a party to contest a permit as well as the inclusion of others that may be affected by the operations of the permittee but not currently in this group. DHCC stated that the amendments do not address "the extension of increasing the 440 yards to the nearest home." The commenter stated that people are being affected well beyond this distance.

RESPONSE

The CBPSP has statutory requirements that limit who can be an affected party for the purposes of requesting a contested case hearing. THSC, §382.058(g) states explicitly that "only those persons actually residing in a permanent residence within 440 yards of the proposed plant may request a hearing." TCEQ is limited to the authority given it by the legislature and cannot expand a right that has been explicitly limited by statute.

In addition, to support the proposed amendments to the CBPSP, the TCEQ conducted a protectiveness review to ensure emissions from facilities authorized by the standard permit are protective of human health and the environment. The results of the protectiveness review demonstrate that the standard permit is protective at the property line and beyond.

COMMENT 117:

TACA stated it is unclear whether a CBP seeking a "straight renewal" would be subject to a request for a contested case hearing. TACA requested that TCEQ confirm that any concrete plant seeking a "straight renewal," (i.e., whereby there is no change in the production process or where there is actually a reduction in production or increase in setback distance, then there would be "no emissions increases") would not be subject to an otherwise valid request for a contested case hearing.

RESPONSE

Any person may request a contested case hearing on a permit application, including a renewal. Whether such a request is referred to the State Office of Administrative Hearings (SOAH) is a decision made by the commission at a regularly scheduled public agenda meeting. However, for no-increase permit renewals as referenced in this comment, THSC, §382.056(g) states that the commission "may not...hold a public hearing...on an amendment, modification, or renewal that would not result in an increase in allowable emissions and would not result in the emission of an air contaminant not previously emitted."

J. Environmental Justice, Land Use, and Zoning (when not covered above)

COMMENT 118:

Several commenters (DHCC, EPA, Harris County, LSLA, Nikolaos Ziropiannis, and an individual) expressed concerns relating to environmental justice, land use, and zoning.

EPA stated that they have been informed of various environmental justice and civil rights concerns with the location of new CBPs in Texas. EPA stated that provisions requiring that cumulative impacts be identified and addressed in a permit decision would help ensure fair treatment of all communities.

Several commenters expressed concern about the general effect of CBPs on minority and low-income communities, the tendency of CBPs to locate in such communities, and the effect of cumulative impacts on disadvantaged communities. DHCC stated that locations of CBPs are chosen by the applicants for their convenience, at the expense of the public's health and financial well-being. The commenters expressed concern that Houston and Harris County have limited zoning protections and many historically Black or Hispanic communities of Houston remain unprotected from undesirable and incompatible land uses. Commenters recommended that TCEQ take various measures to prohibit or closely evaluate the construction of CBPs in areas near residential communities.

RESPONSE

The commission appreciates the comments, but many of these issues are outside the scope of the amendments to the standard permit. To support the proposed amendments to the CBPSP, the TCEQ conducted a protectiveness review to ensure emissions from facilities authorized by the standard permit are protective of human health and the environment. The protectiveness review took into account background concentrations of PM for different regions of the state and considered scenarios where multiple CBP plants operate on the same site. By considering existing monitored background concentrations plus the additional estimated emissions sources from the CBPs, the protectiveness review addresses cumulative effects. As discussed in detail elsewhere in this response to comments, the results of the protectiveness review demonstrate that the standard permit is protective at the property line and beyond.

TCEQ does not have jurisdiction to consider plant location choices made by an applicant when determining whether to approve or deny a permit application unless a statute or rule imposes specific distance limitations that are enforceable by the TCEQ. TCEQ cannot deny authorization of a facility if a permit application contains a demonstration that all applicable statutes, rules, and regulations will be met. Zoning and land use are beyond the authority of the TCEQ for consideration when reviewing air quality permit applications and such issues should be directed to local officials. The issuance of an air quality authorization does not override any local zoning requirements that may be in effect and does not authorize an applicant to operate outside of local zoning requirements. In addition, air permit applications and registrations evaluated by the TCEQ are reviewed without reference to the socioeconomic or racial status of the surrounding community. The TCEQ is committed to protecting the health of the people of Texas and the environment regardless of location, socioeconomic class, or racial status.

The TCEQ encourages participation in the permitting process. The Office of the Chief Clerk works to help the public and neighborhood groups participate in the regulatory process to ensure that agency programs that may affect human health or the environment operate without discrimination and to make sure that concerns are considered thoroughly and are handled in a way that is fair to all. You may contact the Office of the Chief Clerk at 512-239-3300 for further information. Additionally, more information may be found on the TCEQ website. TCEQ's Title VI Compliance website can be found at the following link:

COMMENT 119:

EPA stated that TCEQ should require all applications for a CBP to include an Environmental Justice Analysis and encouraged TCEQ to utilize the EPA's EJ Screen tool. EPA stated that this screening will indicate whether a permitting decision has the potential to contribute to significant public health or environmental impacts, if the community may be particularly vulnerable to impacts from the proposed permit, and whether the community is already disproportionately impacted by public health or environmental burdens. EPA stated that a sound screening practice will also provide important information as to whether there are residents of the affected community who could be disproportionately subjected to adverse health, environmental and/or quality of life impacts on the basis of income, national origin (including LEP status), or other demographic factors. EPA stated that TCEQ should also take into consideration other permitted facilities in the area, including whether these facilities are major or minor sources of pollution and contribute to community risk. EPA stated that an area with an above average number of sources, especially if those sources are large or in close proximity to residents, is a sign of concern.

Public Citizen suggested that TCEQ conduct a community impact analysis, including an environmental justice analysis using the EJ Screen tool. The commenter suggested including locations where these types of facilities cluster and suggested including information on the demographics and socioeconomic profile of affected communities. The commenter noted the current Harris County lawsuit regarding environmental justice issues.

RESPONSE

Since November 2022, applicants are required to complete a Public Involvement Plan form, in accordance with TCEQ's Public Participation Plan, to provide information about the community in which their proposed plant will be located. This information can be used by both the applicant and the commission when considering public participation needs, including the needs of limited English proficient communities and individuals, to ensure equal opportunities for access to the public participation processes for the application. TCEQ does not have jurisdiction to consider plant location choices made by an applicant when determining whether to approve or deny a permit application, unless a statute or rule imposes specific distance limitations that are enforceable by the TCEQ. Zoning and land use are beyond the authority of the TCEQ for consideration when reviewing air quality permit applications and such issues should be directed to local officials. The issuance of an air quality authorization does not override any local zoning requirements that may be in effect and does not authorize an applicant to operate outside of local zoning requirements. Air permits evaluated by TCEQ are reviewed without reference to the socioeconomic or racial status of the surrounding community. TCEQ is committed to protecting the health of the people of Texas and the environment regardless of location. An AQA was conducted for the amendments to the standard permit, and the conditions of the standard permit were developed to ensure that it is protective of human health and the environment. TCEQ encourages participation in the permitting process. The Office of the Chief Clerk works to help the public and neighborhood groups participate in the regulatory process to ensure that agency programs that may affect human health or the environment operate without discrimination and to make sure that concerns are considered thoroughly and are handled in a way that is fair to all.

COMMENT 120:

EPA stated that it's important that TCEQ ensure that community engagement and public participation actions be consistent with federal civil rights law, which require that no person shall be excluded on the basis of race, color, national origin, or other prohibited grounds from participation in any program or activity receiving EPA financial assistance. EPA stated that a public involvement plan that addresses measures to perform enhanced public outreach can be beneficial to some permitting actions. EPA stated that, for a variety of reasons including reduced circulation, newspaper notices are no longer an effective resource as a sole method for communicating public notices for air permits. EPA also stated that online notices are more effective, but not everyone has internet access and online distribution is sporadic. EPA encouraged TCEQ to utilize potentially more effective forms of notification, such as postal mail. EPA suggested that TCEQ require facilities to send mass mailers to inform communities of any CBP operation. EPA stated that presorted standard mail could be used to reach every household within the applicable zip code. EPA also stated that mass mailers should be done for public meetings or hearings.

RESPONSE

Newspaper notice for permit applications is required by statute, and the specifics of what must be contained in the notice can be found in 30 TAC Chapter 39. This includes the requirements for alternative language notice when necessary. The commission adopted updates to the alternative language requirements in August 2021, including new requirements for posting notices and a plain language summary on the commission's website. These notices can be found in two different places on the website, both through the commissioner's integrated database and a separate page developed specifically for posting notices of permit applications subject to 30 TAC Chapter 39. There is a specific table for CBP notices, to assist the public in finding these notices. The following link may be used to access this table:

www.tceq.texas.gov/permitting/air/newsourcereview/airpermits-pendingpermit-apps#concretebatchplant

The commission also mails notice to anyone on the mailing list for a permit application. As part of implementation of legislation from the 88th Legislative Session, including implementation of requirements from TCEQ's 2023 Sunset bill, the commission is in the process of reviewing certain public participation requirements. No changes have been made in response to this comment.

K. Uncategorized Comments**COMMENT 121:**

EPA and an individual recommended that TCEQ consider extending the setback distance for neighboring counties to discourage the migration of CBP from a county with a 200 or 300 ft setback distance to a neighboring county with a 100 ft setback distance.

RESPONSE

Making this change would impose more stringent requirements than would be needed based on the TCEQ's updated AQA. If a CBP registrant does choose to construct a new CBP in a county with a lower setback distance, as opposed to a county with a greater setback distance, the modeling demonstrates that protectiveness would be maintained at the property line and beyond.

COMMENT 122:

AGC stated that TCEQ should provide information on the potential cost of compliance with the new control requirements.

RESPONSE

The requirements for the issuance or amendment of a standard permit are detailed in 30 TAC Chapter 116, Subchapter F (Standard Permits). Unlike formal rulemaking for the Texas Administrative Code, there is not a requirement to conduct a cost analysis for controls or for compliance with a non-rule standard permit.

COMMENT 123:

The City of Dallas recommended that at Definitions subsection (2)(I), "Site" should be defined as the total of all stationary sources located on one or more contiguous or adjacent properties. Alternatively, the permit should consider the cumulative impacts of nearby facilities that are authorized to emit air pollutants.

RESPONSE

The definitions in Section (2) include the definition of "site" which is "the total of all stationary sources located on one or more contiguous or adjacent properties, which are under common control of the same person (or persons under common control)." This definition is unchanged from the previous version of the standard permit and is the same as the established definition of "site" under 30 TAC §122.10 for purposes of the federal operating permits program. Revising this definition for the context of the standard permit could cause confusion or uncertainty about its meaning. Adopting the suggested broader definition of site could cause unintended or nonsensical outcomes as it would potentially aggregate unrelated industries, operations, and facilities with the concrete plant facilities. The commenter's concern about cumulative impacts from other facilities near a CBP are addressed in Section C of this response to comments.

COMMENT 124:

TACA stated that it is unclear whether Project 2022-033-OTH-NR applies only to concrete plants permitted under the Non-Rule Concrete Batch Plant Standard Air Permit. The commenter requested confirmation that this project does not relate in any way to other concrete plants permitted under the "concrete batch plant with enhanced controls permit," which is subject to requirements codified in statutes THSC, §382.05198 and §382.05199.

RESPONSE

TCEQ confirms that the proposed changes associated with this project (2022-033-OTH-NR) are limited to the non-rule Air Quality Standard Permit for Concrete Batch Plants, and do not affect the Air Quality Standard Permit for Concrete Batch Plants with Enhanced Controls. As noted by the commenter, the Standard Permit for Concrete Batch Plants with Enhanced Controls has specific requirements established in statute that differ from the requirements of the "general" Standard Permit for Concrete Batch Plants. Any revisions to the Air Quality Standard Permit for Concrete Batch Plants with Enhanced Controls will be done under a separate rulemaking project with its own comment period and would comply with any applicable statutes.

COMMENT 125:

TACA stated that it is unclear whether the amendments to the Air Quality Standard Permit for Concrete Batch Plants will conform to new legislative changes made by the State or Federal government. The commenter requested that TCEQ confirm that the newly amended standard permit will conform to any additional legal requirements under state or federal law. The commenter asked that TCEQ explain that in writing that some of the revisions that will be necessary to ensure the "Effective Permit" is consistent with state and federal law will likely occur after the public comment period has been administratively closed on the proposed revisions.

RESPONSE

The amended standard permit is consistent with state and federal laws and regulations, including legislation passed during the 88th Session of the Texas Legislature. No changes relating to revised state or federal law have been made to the standard permit since the public comment period closed. If there are significant changes to state or federal law that necessitate additional revisions to the standard permit, it may be necessary to address those revisions through a separate rulemaking action.

COMMENT 126:

Nikolaos Ziropiannis stated that there is substantial uncertainty about the environmental impacts of CBPs because TCEQ effectively has no emission reporting requirements for CBPs. The commenter stated that most CBPs are not required to report emissions to the Texas Emissions Inventory, and only three CBPs are included in the EPA's National Emissions Inventory. The commenter also noted that emissions from CBPs in Texas are not included as "area source" emissions in the National Emissions Inventory. The commenter stated that the 2017 US Economic Census listed 534 CBPs operating in Texas and noted the large difference between the number of operating sites compared to the low number of sites reporting annual emissions. The commenter urged TCEQ to conduct a thorough inventory of CBP emissions as well as mandate detailed recordkeeping and reporting requirements from CBPs. An individual commenter also asked that TCEQ require operators to report their emissions to the state.

RESPONSE

TCEQ acknowledges that most CBPs are not required to report emissions under the 30 TAC Chapter 101 Texas Emissions Inventory program, as the emission rates from most CBP facilities are not significant enough to exceed the applicability threshold for reporting under those rules. In situations where excess emissions occur, CBPs are required to comply with the reporting requirements of 30 TAC Chapter 101, Subchapter F, concerning Emission Events and Scheduled Maintenance, Startup, and Shutdown Activities. TCEQ does not typically require direct reporting of routine, authorized emissions from non-major sources unless such reporting is required by statute or federal standards. The standard permit contains appropriate recordkeeping requirements to ensure that owners or operators of CBPs are following the permit requirements and operating in compliance.

COMMENT 127:

AGC commented that TCEQ should clearly explain to the public how it monitors ambient air quality, and what the data indicates about overall air quality in Texas, particularly with regard to the current NAAQS for PM. AGC stated that TCEQ should include discussion of the data from the two specially placed PM_{2.5} monitors in the TCEQ San Antonio Region.

AGC stated that TCEQ is currently conducting an ambient monitoring study of crystalline silica and should discuss the results of the Interim Study issued on March 15, 2023, that show that all 24-hour measurements at the selected monitoring sites are well below the health-based 24-hour air monitoring comparison value (AMCV) for crystalline silica.

RESPONSE

Texas has one of the most robust air monitoring networks in the country, consisting of over 200 monitoring stations. This network assists TCEQ in monitoring compliance with federal air quality standards, providing information in response to localized air quality concerns, evaluating air pollution trends, and studying air pollution formation and behavior. TCEQ's monitoring network includes more than double the number of monitors required by federal rule, in addition to numerous state-initiative monitors. More detailed

information on TCEQ's ambient air monitoring program and air quality trends in Texas is available on the agency website, at the following link:

www.tceq.texas.gov/airquality/monops

As noted by the commenter, in 2022 two monitors were placed near aggregate handling operations in the San Antonio area. The locations of these monitors are Camp Bullis, near Wilderness Road, San Antonio, 78257, and Von Ormy, Highway 163, 78073. The purpose of these monitors is to obtain data on crystalline silica, PM₄, and PM_{2.5} concentrations in the vicinity of large aggregate processing facilities. Although only a limited amount of data has been collected to date, the measured concentrations of crystalline silica have consistently been far below the applicable 24-hour Air Monitoring Comparison Value (AMCV), and the measured concentrations of PM_{2.5} have been well below the 24-hour NAAQS for PM_{2.5}, except on days known to be influenced by Saharan dust. This information is available in the March 15, 2023 Interim Report available at this link: www.tceq.texas.gov/downloads/toxicology/research-projects/interimapo.pdf

All counties in Texas are currently classified by EPA as "unclassifiable/attainment" for the current PM_{2.5} NAAQS. No Texas counties are classified to be in nonattainment of the standard.

COMMENT 128:

An individual expressed concern about the effects of concrete plants on the vibrancy, character, way of life, and longevity of rural communities. The commenter asked if things could be done to keep concrete plants in industrial areas, instead of rural communities where people live and raise families. The commenter also expressed concern about damage to roads resulting from CBP facilities.

RESPONSE

TCEQ's mission is to protect human health and the environment, consistent with sustainable economic development. Towards that end, TCEQ's air permitting program evaluates sources of pollution to ensure that appropriate control technology is applied, ensure that human health and air quality is protected, and ensure appropriate measures are in place to allow enforcement of the permit requirements. The protectiveness review conducted for the proposed amendments demonstrates that the amended standard permit is protective of human health and air quality at and beyond the property line. However, the scope of TCEQ's authority is limited. As discussed elsewhere in this document, TCEQ does not have the authority to regulate the location of proposed facilities, except in limited circumstances provided by a rule or statute. Zoning and land use issues are typically under the authority of local authorities. TCEQ also does not have the authority to consider the effect of proposed facilities on property values, neighborhood character, or non-air impacts such as traffic, wear and tear on roads, noise, or lighting.

COMMENT 129:

DHCC stated that the amendments do not address the effects of CBP on residents with private water wells. The commenter stated that the washing of vehicles entering and leaving the CBP is depleting the water table and causing issues with well water (sand, red clay, low water pressure). The commenter stated that most residents with low or fixed incomes cannot afford the cost of replacing their well(s).

LSLA stated that many communities experience wastewater impacts from CBPs. The commenter noted that Houston's likelihood of flooding poses unique challenges, and that flooding of CBP sites in Houston leads to contaminated runoff. The commenter provided examples of runoff events and contamination of wells in the SN48 and Dyerforest areas. The commenter provided a list of stormwater management strategies that TCEQ should require, including measures to prevent commingling of stormwater and process water.

The commenter's recommended measures included proper curbing and grading of the site, use of settling basin systems, methods to remove solids from process water, and operational strategies to reduce traffic through process water collection areas and collect stormwater to use in batching and other plant operations.

RESPONSE

While the TCEQ is responsible for the environmental protection of all media (including water), the TCAA (THSC Chapter 382) specifically addresses air-related issues. This standard permit regulates the control and abatement of air emissions only, and therefore issues regarding water use or water pollution are not within the scope of this standard permit amendment. It is the Applicant's responsibility to secure all permits and authorizations necessary for operation of the proposed plant. The issuance of an air quality standard permit does not negate the responsibility of an applicant to apply for any additionally required authorizations prior to construction or operation.

This permit does not authorize the discharge of pollution into a body of water. Individuals are encouraged to report environmental concerns, including water quality issues, or suspected noncompliance with the terms of any permit or other environmental regulation by submitting a complaint using one of the methods described at the following link: www.tceq.texas.gov/compliance/complaints. The TCEQ evaluates all complaints received. If the facility is found to be out of compliance with the terms and conditions of its permit, it may be subject to possible enforcement action.

COMMENT 130:

LSLA and Harris County stated that TCEQ should re-evaluate the 10-year renewal window for CBPSP registrations.

RESPONSE

The commission appreciates the comment. Per 30 TAC Chapter §116.604(1), Duration and Renewal of Registrations to Use Standard Permits, the registration to use a standard permit is valid for a term not to exceed 10 years.

COMMENT 131:

Senator Miles stated that the proposed changes aim to address some of the concerns the commenter and a number of other legislators have raised previously. The commenter referenced the addition of vent hoods to capture more of the concrete dust before it escapes into the air, washing down truck tires so that dust is not carried off of the site, and property setbacks so the dust does not reach other people's homes as easily.

RESPONSE

The commission is encouraged that the proposed amendments address some of the commenter's concerns and agree that the control methods and setback enhancements mentioned by the commenter will capture more concrete dust, reduce the amount of dust carried off the site, and reduce the amount of dust that reaches people's homes.

COMMENT 132:

Senator Miles stated that TCEQ should not allow applicants to break projects up into separate, smaller, projects for permitting purposes (for example, Sunset Advisory Committee Staff Issue 2 and Recommendation 2.1, discussing TCEQ's distorted use of site complexity - analogous to TCEQ allowing complex sites to operate under various permits rather than comprehensive permits).

RESPONSE

The commission appreciates the comments; however, these issues are outside the scope of the proposed amendment. Authorized CBPs are located at sites that are defined as the total of all stationary sources located on one or more contiguous or adjacent properties, which are under common control of the same person (or persons under common control). Due to the nature of concrete production and mixing, the entire batch plant operation is typically authorized under a single standard permit registration. TCEQ is not aware of instances where a single CBP was split across multiple registrations of the standard permit. No change has been made to the standard permit in response to this comment.

IX. **Statutory Authority**

This standard permit is issued under THSC, §382.011, General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC §382.023, Orders, which authorizes the commission to issue orders necessary to carry out the policy and purposes of the TCAA; THSC §382.051, Permitting Authority of the Commission; Rules, which authorizes the commission to issue permits; THSC §382.0513, Permit Conditions, which authorizes the commission to establish and enforce permit conditions consistent with Subchapter C of the TCAA; and THSC §382.05195, Standard Permit, which authorizes the commission to issue and amend standard permits according to the procedures set out in that section.

X. **Appendix 1 to 2023 Amendments -- Excerpt on Crystalline Silica from September 2021 Response to Comments**

Summary of Particulate Matter (PM) Health Risks and Monitoring Data

PM is the primary air pollutant emitted from concrete batch plants, and it mostly comes from materials used to make concrete (sand, gravel, cement, fly ash) being moved around the site and stored. Some emissions also occur from engines operating at the site. Health effects from exposure to PM are dependent on the size of the particle. Less than 20% of the particles emitted from concrete batch plants are small enough to enter the lower part of the respiratory tract where oxygen enters the blood stream. Those particles, which are less than or equal to 2.5 micrometers (μm) in diameter (called $\text{PM}_{2.5}$) are the particles of the greatest toxicological concern. More information about PM sources and toxicology are provided in the sections below, entitled *Particulate Matter Sources and Formation*, and *Particulate Matter Dosimetry and Toxicity*.

As discussed above, the Standard Permit for Concrete Batch Plants protectiveness review conducted by the TCEQ in 2012 showed that the concentrations of $\text{PM}_{2.5}$ were below the levels of the NAAQS, which are set to protect public health with an adequate margin of safety.

Evidence from ambient air monitoring also shows that concrete batch plants do not substantially impact the amount of $\text{PM}_{2.5}$ in the air. Although there are few data measuring $\text{PM}_{2.5}$ around concrete batch plants specifically, there are monitoring data around sources with far greater potential for particulate matter production: aggregate production operations (APOs). Similar to concrete batch plants, APOs will have PM emissions from moving and storing sand and gravel, but they also include sources that can produce far more PM, such as rock crushers. TCEQ monitoring in the vicinity of APOs in central Texas shows that these facilities do not have an impact on measured $\text{PM}_{2.5}$ concentrations. This is consistent with studies in other parts of the country showing a lack of impact of APOs on ambient $\text{PM}_{2.5}$ concentrations.

Summary of Crystalline Silica Health Risks and Monitoring Data

The PM that is emitted from concrete batch plants is mostly composed of crustal material – that is, dust from sand and gravel. Some of the particles will be potentially more toxic, such as crystalline silica. However, as with PM in general, only tiny particles of crystalline silica (called respirable crystalline silica) have the potential to cause health effects in the respiratory tract. In a concrete batch plant, these tiny crystalline silica particles only have the potential to be emitted from cement and fly ash, and they make up a just small fraction of cement (< 1%) or fly ash (< 7%). Although the agency did not explicitly model the levels of crystalline silica emitted by a concrete batch plant in the 2012 protectiveness review for the Standard Permit, the agency recently estimated what those levels might be and compared them to the TCEQ's health-protective screening level. Even when using worst-case assumptions, the estimated crystalline silica concentrations are below TCEQ's health-based Effects Screening Level (ESL), demonstrating that the standard permit is health-protective. More information about the estimates of crystalline silica concentrations is provided in the *Estimates of Crystalline Silica Emissions from Concrete Batch Plants* section below.

The TCEQ's health-based ESL is designed to prevent any adverse health effects, such as respiratory diseases, for all members of the general public including potentially sensitive subpopulations (e.g., children, the elderly, and those with pre-existing health conditions).

Exposure to high levels of crystalline silica for months to years is associated with a very specific disease: silicosis, which is an irreversible, progressive, and fatal rare lung disease. This disease is only associated with occupational exposure of workers for several years up to a lifetime to high workplace levels of fine particles of crystalline silica. Silicosis is not caused by community exposure to fine particles of crystalline silica.¹ This is reflected by the rarity of the disease: in 2016 the annual age-adjusted hospitalization rate for silicosis was just 4 per one million people, all of whom were occupationally exposed. More information about respirable crystalline silica-associated health effects is provided in the sections below entitled *Health Effects of Crystalline Silica, and Silicosis in Texas*.

Further, as with PM, there are monitoring data available for crystalline silica close to APOs, including sand mines that would be expected to generate far more respirable crystalline silica than a concrete batch plant. The TCEQ has reviewed ambient air crystalline silica levels measured near APOs in various locations throughout the United States where data are available. These data indicate that the contribution of crystalline silica from these facilities to ambient levels of respirable crystalline silica is negligible or minimal and the levels are generally below the health-based air monitoring comparison values for crystalline silica developed by the TCEQ. More information about crystalline silica ambient air monitoring is provided in the *Ambient Air Monitoring Near APOs* section below.

Other Potential Health Risks from Concrete Batch Plant Air Emissions

The PM that is emitted by concrete batch plants may contain small amounts of other chemicals, such as metals. In addition to PM, concrete batch plant operations can produce some gaseous chemicals as well if diesel engines are operating on site. Because of this, the TCEQ's 2012 protectiveness review of the Standard Permit for Concrete Batch Plants modeled concentrations of carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), formaldehyde, and particulate nickel. The modeling

¹ Agency for Toxic Substances and Disease Registry (ATSDR). 2019. Toxicological profile for silica. Available from: www.atsdr.cdc.gov/ToxProfiles/tp211.pdf

demonstrated that the estimated concentrations of these chemicals were below either the NAAQS (for CO, NO₂, and SO₂), or were below the TCEQ's health-based ESLs (for formaldehyde and nickel), demonstrating that the standard permit is protective of human health and the environment.

Although other metals besides nickel could be found in the PM emitted from a concrete batch plant, nickel was chosen to model because it has the highest short-term emission rate and lowest ESL out of all the potential trace metals, and therefore if nickel levels are health-protective, then so too will concentrations of other metals.

Particulate Matter Sources and Formation

PM is composed of components that are directly emitted (primary PM) as well as formed through atmospheric chemical reactions involving gaseous precursors (secondary PM). Both primary and secondary PM contribute substantially to overall PM mass in the ambient air. Within an urban environment, most primary PM_{2.5} emissions (particles with aerodynamic diameters ≤ 2.5 μm) are from anthropogenic (human-made) sources and include some combination of industrial activities, motor vehicles, cooking, and fuel combustion, including biomass burning. However, in many locations, secondary PM_{2.5} formed from the precursors sulfur dioxide (SO₂), oxides of nitrogen (NO_x), ammonia (NH₃), and volatile organic compounds (VOCs), accounts for the majority of PM_{2.5} mass. PM_{10-2.5} (aerodynamic diameters between 2.5 and 10 μm) is almost entirely primary in origin. Crustal materials such as those from crushed stone, construction sites, and other sources (i.e., soil dust, fine sand particles from vehicle traffic on unpaved roads, and metallurgical operations) dominate the PM_{10-2.5} fraction throughout the U.S., and fugitive dust has been identified as the largest source of measured PM₁₀ (aerodynamic diameters ≤ 10 μm) in many locations in the western U.S. Mineral dust, biological material/organic debris, and sea spray have also been identified as mainly in the coarse (i.e., PM₁₀) fraction. Wildfires and dust storms are intermittent emissions sources.²

PM Components

Measurement of PM components can provide insight into what sources contribute to PM concentrations in ambient air. Additionally, sulfate, nitrate, ammonia, organic carbon (OC), elemental carbon (EC), as well as various elements can be measured to provide insight into what components may contribute to differential toxicity. It is also useful to distinguish between bulk PM components and more finely speciated components. The term bulk component refers to a large component category like OC, sulfate, nitrate, or crustal material. Some bulk components are a single species like sulfate, while others like OC and crustal material are composed of numerous compounds or elements that are usually present in lower amounts. Crustal material often makes the greatest contribution to PM_{10-2.5} mass. However, the organic fraction also makes a substantial contribution (e.g., in the Southeast, OC and EC account for approximately 30% of PM_{10-2.5}), and primary biological aerosol particles (i.e., microorganisms and fragments of living things) can also account for a large fraction of PM_{10-2.5} mass.³

² U.S. Environmental Protection Agency (US EPA). 2019. Integrated Science Assessment for Particulate Matter (December 2019). Center for Public Health and Environmental Assessment, Office of Research and Development, U.S. Environmental Protection Agency, Research Triangle Park, NC. EPA/600/R-19/188

³ USEPA (2019).

PM Formation from Concrete Batch Plants

Emissions of PM₁₀ and PM_{2.5} from concrete batch plants in Texas must comply with the NAAQS as part of the standard permit requirements. Despite this requirement, neighbors may have complaints about dust/PM emissions from concrete batch plants. Of the PM emitted from concrete batch plants, including exhaust from any diesel engines operating onsite, about 50% are particles that are too large to enter the human respiratory tract (greater than 10 µm in diameter) and these particles are often visible as dust. And as previously mentioned, crustal materials such as those from crushed stone, construction sites, and other sources (e.g., soil dust, fine sand particles from vehicle traffic on unpaved roads) dominate the PM_{10-2.5} fraction throughout the U.S. Since concrete's primary component is aggregate (i.e., crustal materials such as crushed stone, sand, gravel), it is not surprising that PM₁₀ emissions predominate over PM_{2.5} at concrete batch plants. The result of this emission difference can be seen from the modeled concentrations of PM₁₀ compared to PM_{2.5} in the 2012 protectiveness review for the Standard Permit for Concrete Batch Plants. For example, the annual average PM concentrations for the 30 cubic yards/hour scenario at 100 feet for PM₁₀ was 39.24 µg/m³, and for PM_{2.5} was 9.31 µg/m³. This shows that PM_{2.5} was < 25% of the PM₁₀ concentration.

Particulate Matter Dosimetry

Particle dosimetry characterizes the intake, deposition, and retention of PM in the respiratory tract. Understanding the dosimetry of particles is crucial to providing evidence for biologically plausible pathways that support the link between PM exposure and various health effects. A variety of factors influences the amount of inhaled particles deposited and retained in the respiratory tract. Generally, these factors include exposure concentration and duration, activity level, particle properties (e.g., particle size, moisture absorption, solubility in airway fluids), and breathing conditions (e.g., nose vs. mouth breathing, breathing rate). In humans, the fraction of oral versus nasal breathing is influenced by age, activity level, sex, disease status (e.g., allergies, upper respiratory tract infections), and perhaps body mass index, which ultimately contributes to the fraction of particles inhaled and reaching the lower respiratory tract. Recent evidence demonstrates the translocation of poorly soluble particles, generally less than 200 nm in diameter, from the respiratory tract into circulation with transport to other organs. The fraction of deposited particles that may move into circulation is small and dependent on particle size (e.g., in the range of ≤0.2% for particles between 5 and 200 nm but may reach a few percent for even smaller particles).⁴

Coarse particles are those with diameters generally larger than 2.5 µm and ≤10 µm (PM_{10-2.5}). These particles penetrate beyond the nasopharynx and deposit in the large airways, primarily the tracheobronchial region. High linear velocities in the bronchi cause coarse particles to concentrate in the areas of highest impaction, the airways' bifurcations. These areas have high particle densities per tissue surface area. The nose acts as the first line of defense against coarse particles. With its narrow air passages, mucosal folds, and mucous layer covering ciliated epithelial cells, the nose can effectively filter most coarse particles. Fine particles ≤ 2.5 µm in diameter are primarily deposited in the small peripheral airways and the alveoli (i.e., the pulmonary region). A large proportion of fine particles that reach the small airways and alveoli remain suspended in the airways and are subsequently exhaled.

⁴ USEPA (2019).

PM Associated Health Effects

A large body of scientific evidence demonstrates that there are health effects attributed to both short-and long-term PM exposure, with the strongest evidence for a relationship between some health effects and PM_{2.5}. Data for health effects and exposures to PM_{10-2.5} are more limited and uncertain, complicating the interpretation of the evidence. Because PM_{2.5} can penetrate deep into the lungs (pulmonary region) and the scientific evidence for associated health effects is much stronger and more causally conclusive than for PM_{10-2.5}, PM_{2.5} is generally considered the size fraction of most health concern.

To protect public health, there are NAAQS for both PM_{2.5} and PM₁₀, which have been revised over time. The US EPA last revised the primary NAAQS for PM in 2013 to provide increased protection of public health. Regarding the current primary standards for PM_{2.5} and PM₁₀, the levels of the standards are:

- PM_{2.5} annual NAAQS= 12 µg/m³
- PM_{2.5} 24-hour NAAQS= 35 µg/m³
- PM₁₀ 24-hour NAAQS = 150 µg/m³

Based on US EPA's latest analyses for the NAAQS, key findings for PM_{2.5} and PM_{10-2.5} are provided below.⁵

PM_{2.5}

- Epidemiologic studies report consistent positive associations between short-term (days-to-weeks) and long-term (years) PM_{2.5} exposure and respiratory and cardiovascular effects and mortality.
- The strongest evidence of an effect of short-term PM_{2.5} exposure on respiratory effects is provided by epidemiologic studies of asthma and chronic obstructive pulmonary disease (COPD) exacerbation. For long-term exposure, studies provide evidence of health effects such as effects on lung function and development in children, the development of asthma in children, and respiratory mortality.
- Animal toxicological and controlled human exposure studies provide coherence and biological plausibility for effects observed in epidemiologic studies of short- and long-term PM_{2.5} exposure, particularly respiratory effects, cardiovascular effects, and mortality.
- Both animal toxicological and controlled human exposure studies, using concentrated ambient particle (CAP) exposures, provide evidence of a direct effect of PM exposure on various health effects (e.g., lung function decrements in laboratory animals due to short-term exposure).
- Epidemiologic studies that conducted co-pollutant analyses show that PM_{2.5} associations with health effects remain relatively unchanged when adjusting for gaseous pollutants and other particle size fractions such as PM_{10-2.5}.
- Differences in risk estimates between different study areas is not attributed solely to differences in the composition of PM_{2.5}, but also reflects city-specific exposure conditions (e.g., housing, and commuting characteristics).

⁵ US EPA (2019).

- For health effects where it was concluded that the evidence is suggestive but not sufficient to infer a causal relationship (i.e., short-and long-term PM_{2.5} exposure and metabolic effects, male and female reproduction and fertility, pregnancy and birth outcomes, and short-term exposures and nervous system effects), epidemiologic and experimental studies report inconsistent evidence of an association/effect or there are relatively few relevant studies.

PM_{10-2.5}

- PM_{10-2.5} concentrations are more spatially variable than PM_{2.5}, and micro -to neighborhood-scale data are not widely available, adding uncertainty to the interpretation of results from epidemiologic studies, especially for long-term exposure studies that rely on spatial contrasts to examine associations with health effects.
- Epidemiologic studies that examine associations between short- and long-term PM_{10-2.5} exposure and various health effects use multiple methods to estimate concentrations, which has complicated the comparison of results across studies.
- For some health effects, few or no experimental studies have examined the relationship with short-and long-term exposure to PM_{10-2.5}, and the few studies conducted provide inconsistent evidence of effects due to PM_{10-2.5} exposures, contributing to limited coherence and biological plausibility.
- The causality determinations for all health outcome categories for short-and long-term PM_{10-2.5} exposure has been concluded to be either suggestive but not sufficient to infer a causal relationship or inadequate to infer the presence or absence of a causal relationship.

Subpopulations at Potentially Increased Risk from PM Exposure

Not all people respond to exposure to air emissions to the same extent. Sensitive groups, also called at-risk populations, are at increased risk for experiencing adverse air emissions-related health effects. These groups can be at increased risk due to intrinsic (i.e., biological) factors, extrinsic (i.e., external, non-biological) factors, higher exposure, and/or increased dose at a given concentration. The severity of the health effects that these groups experience may be much greater than in the general population. Groups that could be at increased risk of air emissions-related health effects include, for example: (1) people with heart disease, lung disease, or other pre-existing health conditions (e.g., diabetes); (2) children; (3) older adults; (4) people of lower socioeconomic status (SES); (5) current and former smokers; and (6) pregnant women and/or their developing fetuses.

Life stages that are often examined to assess whether there is evidence of increased risk include childhood (less than 18 years of age) and older adulthood (65 years of age and older). The following factors can increase risk in children: (1) children spend more time outdoors at greater activity levels than adults, resulting in higher exposures and higher doses of ambient pollution per body weight and lung surface area; (2) children are more likely to have asthma than adults; and (3) children's developing lungs are prone to damage, including irreversible effects through adolescence. For older adults, increased risk might be related to the higher prevalence of pre-existing respiratory or cardiovascular diseases found in this age group, as well as the gradual decline in physiological defenses that occurs with age.

As another example, various factors might increase the risk of pollution-related health effects in people with lower SES, including a higher prevalence of pre-existing diseases; limited access to medical care; increased nutritional deficiencies; and exposure to higher levels of pollutants due to the location of their homes, schools, and/or work environments.

For PM, evidence for the factors that increase risk from particle pollution comes from animal toxicology, controlled human studies, and epidemiological studies. Based on US EPA's latest analyses, of the factors considered, race and lifestyle (children) were the only factors for which evidence was adequate to indicate an increase in risk for PM_{2.5}-related health effects. In particular, evidence for both health effects (i.e., primarily mortality) and exposure demonstrate that nonwhite populations are at increased risk compared with whites. Several high-quality studies indicate that nonwhite populations across different geographical regions are exposed to higher concentrations of PM_{2.5}. In addition, a number of epidemiologic studies demonstrate stronger associations in nonwhite populations for PM_{2.5}-associated mortality. Increased risk for nonwhites compared with whites has also been demonstrated for other health outcomes including respiratory and cardiovascular effects and birth outcomes, but there is less confidence in the evidence for these outcomes.

There is strong evidence from studies examining health effects specific to children indicating that children are at increased risk of the effects of PM_{2.5} exposure. Specifically, epidemiologic studies of long-term PM_{2.5} exposure demonstrate associations with impaired lung function growth, decrements in lung function, and increased incidence of asthma development in children. The evidence from analyses that specifically investigate effects in children compared to adults provides limited direct evidence that children are at increased risk of PM_{2.5}-related health effects compared to adults. In addition, there is some evidence indicating that children can have higher PM_{2.5} exposures than adults and that there are differences in how children breathe compared to adults that can contribute to higher doses.

In contrast, the evidence is only suggestive that populations with pre-existing cardiovascular or respiratory disease, populations that are overweight or obese, populations that have particular genetic variants, populations that are of low SES, and people who smoke are at increased risk for PM_{2.5}-related health effects. There is inadequate evidence to conclude whether pre-existing diabetes, elevated cholesterol, older adults, residential location (including proximity to source and urban residence), sex/gender, or diet modify risk for PM_{2.5}-associated health effects.⁶

Particulate Matter Air Monitoring

Although there are few data measuring PM_{2.5} around concrete batch plants specifically, there are monitoring data around sources with far greater potential for PM production: APOs. Similar to concrete batch plants, APOs will have PM emissions from moving and storing sand and gravel, but they also include sources that can produce far more PM, such as rock crushers.

In October 2019, TCEQ began ambient air PM_{2.5} monitoring at sites that are located within one mile of APOs in central Texas. There are currently five monitoring sites located predominantly downwind of APOs. Data indicates that APOs do not appear to have an impact on measured PM_{2.5} concentrations. These data are consistent with a study sponsored by the National Stone Association (NSA) in which ambient air PM_{2.5} concentrations were monitored near large permanent rock crushing facilities with typical processing equipment and quarries in Colorado, North Carolina, and Virginia.⁷ That study indicated that rock crushing operations have negligible impact on ambient PM_{2.5} concentrations.

⁶ US EPA (2019).

⁷ Richards J, T Brozell, J Hayden. 1999. Upwind-Downwind Ambient PM_{2.5} Monitoring at Stone Crushing Plants. EM. August:17-22.

Crystalline Silica Monitoring

TCEQ has reviewed ambient air crystalline silica levels measured near APOs in various locations throughout the United States where data are available.⁸ These data indicate that the contribution of crystalline silica from these facilities to ambient levels of PM and respirable crystalline silica is negligible or minimal and the levels generally are below the health-based air monitoring comparison values (AMCVs) for crystalline silica developed by the TCEQ.

For respirable crystalline silica (PM₄), the 24-hr AMCV is 24 µg/m³, and the long-term AMCV is 0.27 µg/m³. In urban areas throughout the United States, average annual ambient air concentrations of crystalline silica in PM_{2.5} and in PM₁₀ were 0 – 1.9 µg/m³ and 0.3 – 5.0 µg/m³, respectively. The range of respirable crystalline silica (PM₄) measured in samples collected for 24 or 48 hours near APOs ranged from 0 (many samples were below the limit of detection) to 2.8 µg/m³. Health-based AMCVs are safe levels at which exposure is unlikely to result in adverse health effects. When compared to TCEQ's AMCVs for crystalline silica (24 µg/m³ for 24-hour exposure; 0.27 µg/m³ for long-term exposure) the ambient air concentrations of crystalline silica near APOs are generally not likely to cause acute or chronic adverse health effects and are not associated with silicosis.

Estimates of Crystalline Silica Emissions from Concrete Batch Plants

To estimate the concentrations of respirable crystalline silica from concrete batch plants operations, we can assess the fraction of crystalline silica in Portland cement and fly ash and compare that to the modeled PM concentrations attributable to those sources. This will allow for the estimation of the amount of crystalline silica in PM emitted from concrete batch plants.

This analysis used the modeling parameters and PM concentrations presented in the 2012 memo: Concrete Batch Plant Standard Permit Protectiveness Review. The estimated PM concentrations for silo and fugitive emissions (these are emissions from cement and fly ash) were calculated as the fraction of silo + fugitive divided by total emissions for both PM₁₀ and PM_{2.5}. The crystalline silica concentrations were estimated by assuming that 1.66% of those concentrations were composed of crystalline silica (based on high-end estimates in cement (1%) and in fly ash (7%), at a ratio of 89:11 cement: fly ash). To estimate the fraction of PM₄ crystalline silica, TCEQ averaged the PM_{2.5} and PM_{10-2.5} concentrations. This generated an estimated concentration of PM₄ crystalline silica of 0.225 µg/m³ for 30 cu yd/hr, and 0.218 µg/m³ for 300 cu yd/hr. Both concentrations are lower than the PM₄ crystalline silica long-term ESL of 0.27 µg/m³.

These estimates are conservative (i.e., over-estimated) in the following ways:

- They assume old emissions rates were about 50% higher than current worst-case emissions rates.
- They use the highest estimates of crystalline silica in Portland cement (assumes 1%, actual is probably < 0.1%), and in fly ash (assumes 7%, range is 1-7%).
- They assume that the PM₄ fraction is an average of PM_{2.5} and PM_{10-2.5} (in theory this would actually provide the PM_{6.25} fraction).

⁸ Texas Commission on Environmental Quality (TCEQ). 2020b. Crystalline Silica. AS-202 (12/20). Available at:

www.tceq.texas.gov/downloads/toxicology/publications/community-health-impacts-as-202.pdf

Health Effects of Crystalline Silica

Silica (silicon dioxide, SiO₂) is the most abundant mineral in the environment, with over 95% of the earth's crust made of minerals containing silica. Silica exists in two forms: crystalline and amorphous. Airborne silica, both in amorphous and crystalline forms, is ubiquitous in the environment and may be found in airborne particles from various sources such as paved and unpaved roads, wind-blown soil, and agricultural activities, as well as industrial sources such as construction, foundries, glass manufacturing, abrasive blasting or any industrial or commercial use of sand and quartz, as well as mining and rock crushing operations.

Crystalline silica occurs naturally in four crystalline forms: (1) quartz, the most common, which is in granite, shale, and beach sand, and in trace amounts in soil, (2) cristobalite, (3) tridymite, and (4) tripoli. Crystalline silica is significantly more hazardous than amorphous silica and is recognized as an important occupational inhalation hazard. Workers exposed daily for several years up to a lifetime to high occupational levels of fine respirable particles of crystalline silica may develop silicosis, an irreversible, progressive, and fatal, but preventable, lung disease.⁹

In the United States, approximately 2.3 million workers in 676,000 workplaces are exposed to crystalline silica; this includes approximately 2 million workers in the construction industry. Occupations associated with exposures to respirable crystalline silica include construction, stone countertop fabrication, and hydraulic fracking. Virtually any process that involves movement of earth (e.g., mining, farming, and construction), mechanical disturbance of silica-containing products such as masonry and concrete or use of sand or other silica-containing products may potentially expose a worker to crystalline silica.¹⁰

Workers exposed daily for several years up to a lifetime to high workplace levels of fine particles of crystalline silica may develop silicosis. The effects of inhaled crystalline silica are strictly associated with occupational exposure to particles of respirable size - that is, small enough to be inhaled past the upper airways and penetrate the human lung (e.g., PM₄, PM with a diameter ≤ 4 μm). The size of the particles that cause silicosis is at least 100 times smaller than ordinary sand found on beaches and playgrounds. Because of the natural hardness of silica, high energy is required to fracture this mineral into a respirable size. Activities such as grinding, cutting, sawing, drilling, crushing, and abrasive blasting of stone, rock, concrete, mortar, or brick may generate respirable crystalline silica. Exposure in the workplace is regulated by the Occupational Safety and Health Administration (OSHA).

Despite the vast number of laborers working with silica-containing materials, targeted efforts in workplaces have largely been successful in minimizing potential exposure of workers to respirable crystalline silica and preventing silicosis. It is estimated that during 1987–1997, approximately 3,600–7,300 new silicosis cases were diagnosed yearly in the United States. As reported by the National Institute for Occupational Safety and Health (NIOSH) in 1994, 13,744 deaths with silicosis as a possible contributor (mentioned in the death certificate) occurred in the United States during 1968–1990. Since then, silicosis mortality has declined due to improved industrial hygiene standards and more stringent regulatory standards and guidelines for occupational exposure. A recent resurgence in occurrences of silicosis in younger workers involved with new tasks and occupations (e.g., quartz countertop installation and hydraulic fracturing) emphasizes the need for appropriate industrial hygiene practices. The cumulative dose

⁹ ATSDR (2019).

¹⁰ Occupational Safety and Health Administration (OSHA) 2016. Frequently Asked Questions: Respirable Crystalline Silica Rule.

of respirable silica in exposed workers (respirable concentration multiplied by duration of exposure) is the most important factor in the development of silicosis.¹¹

The most recent prevalence data for silicosis in Texas is from 2016; in that year, the annual age-adjusted hospitalization rate for silicosis was 4 per one million residents. From 1999 to 2018, the total number of silicosis-associated deaths in Texas was 157, with an age-adjusted death rate of 0.4 per one million residents.¹²

It is important to note that the possible outcomes of community exposure to ambient crystalline silica do not include the potential silicosis risk associated with occupational exposure. Airborne silica, both in amorphous and crystalline forms, is a ubiquitous mineral that is not unique to areas near concrete batch plants, construction sites, and other silica-generating activities, and is not unique to Texas. Moreover, most airborne ambient crystalline silica is not small enough to be inhaled and reach deep into the lungs.

Silicosis in Texas

Silicosis is an occupational lung disease that is caused by long-term exposure to high workplace levels of respirable crystalline silica. Silicosis is a reportable disease in Texas, meaning that health-care providers, hospitals, laboratories, and other designated professionals report confirmed or suspected occupational cases of and deaths from silicosis to the Texas Department of State Health Services (TDSHS), which then reports the data to the Centers for Disease Control and Prevention (CDC).

In 2014, the TDSHS received a report of the first case of silicosis reported in the United States associated with silica dust exposure during fabrication of engineered stone countertops.¹³ In 2019, the TDSHS received reports of an apparent cluster of 12 silicosis cases among workers at an engineered stone countertop manufacturing and fabrication facility.¹⁴ Silicosis is defined as an occupational disease, meaning that workers who are exposed to high levels of silica occupationally are at risk of developing silicosis. The general public is not at risk of developing silicosis; however, some members of the general public could potentially be exposed to high levels of silica through hobbies, such as pottery making. Because the reporting rules of the CDC and TDSHS do not allow public reporting of deaths fewer than 10 and 5, respectively, for each year, the exact number of deaths in Texas from silicosis is not publicly available for each year, but they are generally below 10 from 2005-2016. The TDSHS provided data from 2011-2016 showing between 35 and 38 total deaths from silicosis in Texas, resulting in an approximate average annual age-adjusted silicosis death rate of 0.3 per one million Texas residents. In Texas, the total number of silicosis-associated deaths was 157 from 1999-2018, with an age-adjusted death rate of 0.4 per one million residents.¹⁵

¹¹ ATSDR (2019).

¹² Bell JL, JM Mazurek. 2020. Trends in Pneumoconiosis Deaths — United States, 1999–2018. *MMWR*. 69:693–698.

¹³ Friedman GK, R Harrison, J Bojes, K Worthington, M Filios. 2015. Silicosis in a countertop fabricator – Texas, 2014. *MMWR*. 64:129-130.

¹⁴ Rose C, A Heinzerling, K Patel, C Sack, J Wolff, L Zell-Baran, D Weissman, E Hall, R Sooriash, RB McCarthy, H Bojes, B Korotzer, J Flattery, JL Weinberg, J Potocko, KD Jones, CK Reeb-Whitaker, NK Reul, CR LaSee, BL Materna, G Raghu, R Harrison. 2019. Severe silicosis in engineered stone fabrication workers – California, Colorado, Texas, and Washington, 2017-2019. *MMWR*. 68:813-818.

¹⁵ Bell and Mazurek (2020).