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SUMMARY DOCUMENT FOR AIR QUALITY STANDARD PERMIT FOR PERMANENT ROCK AND CONCRETE CRUSHERS

I. EXECUTIVE SUMMARY

The Texas Commission on Environmental Quality (TCEQ or commission) is proposing an air quality standard permit for rock crushing and concrete crushers. This standard permit is applicable to all rock crushers that process nonmetallic minerals or a combination of nonmetallic minerals at quarries, mines, aggregate handling facilities, concrete recycling sites, etc., on a permanent basis and meet the conditions of this standard permit.

II. EXPLANATION AND BACKGROUND OF AIR QUALITY STANDARD PERMIT

This standard permit is being developed to replace the permit by rule (PBR) for rock crushers (Title 30 Texas Administrative Code (30 TAC) §106.142, Rock Crushers). This PBR has potential issues with enforceability and it can be difficult to determine compliance for facilities that are authorized by the PBR. This standard permit was developed to update technical requirements, provide clearer, more enforceable conditions, require recordkeeping that facilitates the determination of compliance, and update the authorization for these facilities to include statutory requirements for certain concrete crushers. Owners or operators of crushing facilities authorized by the PBR may continue to operate under the PBR unless the crusher is moved or modified. This standard permit provides a streamlined preconstruction authorization process to be used by any owner or operator of a crusher that can comply with the standard permit requirements and all other state or federal permitting statutes or regulations.

III. OVERVIEW OF AIR QUALITY STANDARD PERMIT

The commission is proposing a standard permit for permanent rock crushers under 30 TAC Chapter 116, Subchapter F, Standard Permits. The commission currently authorizes rock crushers under the conditions of 30 TAC Chapter 106, Permits by Rule, the Air Quality Standard Permit for Temporary Rock Crushers and Temporary Concrete Crushers, or under 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification. The development of this standard permit is consistent with the desire of the commission to simplify its regulatory structure and provide standard permits as an alternative to authorization by a case-specific new source review permit. The general public often expresses concerns with crushing sites and operations that include, but are not limited to, traffic safety, noise, appearance, and property values. These types of concerns are not addressed under the Texas Clean Air Act and are beyond the commission's jurisdiction. Those concerns of the general public regarding nuisance dust, ambient air quality, and potential adverse health impacts are the focus of the protectiveness review and the resulting conditions of the standard permit.

The commission is including requirements to minimize dust emissions, establish property line distance limitations, and establish opacity and visible emission limitations. These requirements are based on air dispersion modeling, an impacts analysis, and plant observations performed to verify the protectiveness of the standard permit. The commission has concluded research which shows that the standard permit for a permanent rock crusher or a permanent concrete crusher is protective of the public health and welfare, and that facilities operating under the conditions specified will comply with commission regulations.

The standard permit is designed to authorize a rock crusher that will be permanently located. It is not intended to provide an authorization mechanism for all possible unit configurations or for unusual operating scenarios. Those facilities which cannot meet the standard permit conditions may apply for an air quality permit under 30 TAC §116.111, General Application, or the Air Quality Standard Permit for Temporary Rock Crushers and Temporary Concrete Crushers.

IV. PERMIT CONDITION ANALYSIS AND JUSTIFICATION

The general conditions for standard permits, located in 30 TAC Chapter 116, Subchapter F, apply to all owner or operators of crushers seeking authorization under this standard permit. With the exception of 30 TAC §116.610(a)(1), Applicability, all crushers are required to meet 30 TAC Chapter 116, Subchapter F rule requirements as well as the specific conditions of this standard permit. Any changes that are made to this standard permit by the commission shall apply to all existing and future facilities that are authorized by this standard permit. As specified by 30 TAC Chapter 116, Subchapter F., to remain authorized under the standard permit, a facility shall comply with an amendment to the standard permit on the later of either the deadline the commission provides in the amendment or the date the facility's registration to use the standard permit is required to be renewed (however, compliance with an amended standard permit is not required within 24 months of the amendment unless it is necessary to protect public health). The standard permit authorization is location specific, and relocation to a new site requires the owner or operator to apply for a new authorization. Vacating a site voids the authorization at that site.

General Requirements

Section (1), General Requirements, outlines the administrative requirements that all crushers must meet.

Similar to the Air Quality Standard Permit for Temporary Rock Crushers and Temporary Concrete Crushers, subsection (1)(A) would provide definitions for the terms site and associated sources. The definition for the term site is consistent with the definition that is given in 30 TAC Chapter 122, Federal Operating Permits Program. The definition for the term associated sources is based on the term facilities defined in 30 TAC Chapter 116. These definitions are included to ensure clarity when these terms are used in the conditions of the standard permit.

This standard permit would also include a definition for the term residence. The term residence is used throughout various statutes and rules of the TCEQ and other state agencies. However, the term is not defined under the Texas Clean Air Act or by air quality-related agency rules. Webster's defines "reside" as "to live in a place for a permanent or extended time." It further defines "residence" as "the place in which one lives." (Webster's II New College Dictionary, 1995) Texas courts have generally accepted that "residence" means "the place where one actually lives or has his or her home; a person's dwelling place or place of habitation; a dwelling house." (*Owens Corning v. Carter*, 997 S.W.2d 560 (Tex. 1999); *Malnar v. Mechell*, 91 S.W.3d 924 (Tex. App. Amarillo 2002); *Dickey v. McComb Development Co., Inc.* 115 S.W. 3d 42 (Tex. App. San Antonio 2003))

In most situations, whether or not a structure is a residence is generally self-evident. In some cases, however, questions may arise as to the character of a structure located near a facility in determining its compliance with applicable distance requirements. When necessary, a case-by case-determination shall be made by the TCEQ executive director regarding whether or not a structure is in fact a residence. The

executive director may consider factors and circumstances specific to the situation in making the determination. Potential factors that may be considered include, but are not limited to:

- Local tax rolls showing the property as a residence
- Utility bills showing a residential rate
- Location of structure in a neighborhood with any deed restrictions or zoning ordinances on use as a business or other non-residential activity
- Frequency of use of structure as a residence

Proposed subsection (1)(B) would provide distance limitations for concrete crushers with subsection (1)(C) specifying that the distance requirements in (1)(B) are established at the time the standard permit application is filed with the commission. However, subsection (1)(D) would provide exceptions to the distance requirements in (1)(B) for demolition projects.

Proposed subsection (1)(E) states that the commission will not accept an application for a crushing facility for authorization under Texas Health and Safety Code (THSC), §382.0518, Preconstruction Permit, for a period of one year from registration of a crushing facility under this standard permit. This is to prevent the use of this standard permit as an immediate precursor to a larger crushing operation. Subsection (1)(F) would prevent an applicant that has submitted an application for a crushing facility under THSC, §382.0518, from being authorized by this standard permit at the same site for a period of 12 months from the time the application for authorization under THSC, §382.0518, is withdrawn. This is to prevent an applicant that has contested case hearing requests for a permit under THSC, §382.0518, from withdrawing that application and immediately using this standard permit.

Proposed subsection (1)(G) states that an applicant must file for the standard permit using Form PI-1S, checklist, and Table 17. It also specifies that a compliance history review will be accomplished. An applicant classified as a poor performer will not be granted authorization under this standard permit.

Proposed subsection (1)(H) states that the crushing facility shall not be constructed or operated without written authorization from the executive director. Start of construction shall be no later than 18-months from the date of permit issuance. Construction progress and startup notification shall be in accordance with the general conditions of the standard permit. As stated in subsection (1)(I), permit fees would be remitted in accordance with 30 TAC §116.614, Standard Permit Fees.

Proposed subsection (1)(J) states that New Source Performance Standards identified in Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60), Subpart A, General Provisions, and Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants, are applicable to sources authorized by this permit, and, as stated in subsection (1)(K), crushing facilities authorized by this permit would be authorized to process only those materials identified as nonmetallic minerals as defined in 40 CFR Part 60, Subpart OOO. Proposed subsection (1)(L) identifies other commission rules that may be applicable and states that this standard permit does not supersede those rules.

Proposed subsection (1)(M) identifies recordkeeping requirements. Production records would be kept at the site for daily hours of operation and total throughput per hour to demonstrate compliance with the conditions of the standard permit. Proposed subsection (1)(N), specifies the requirement to comply with 30 TAC Chapter 101, Subchapter F, Emissions Events and Scheduled Maintenance, Startup, and Shutdown Activities. Proposed subsection (1)(O) states that the facilities authorized by this permit would not be required to meet the emission and distance requirements established in 30 TAC 116.610(a)(1),

since modeling has indicated that the permit is protective without this restriction. Proposed subsection (1)(P) states that maintenance, activities are not authorized by this standard permit and that startup and shutdown emissions would need to be approved by separate authorization if expected to exceed emissions from production operations.

Proposed subsection (1)(Q) states that an applicant authorized by this standard permit would not be eligible for any other authorization in 30 TAC Chapter 106, Subchapter E, Aggregate and Pavement, or 30 TAC §106.512, Stationary Engines and Turbines, at the same site as the crusher authorized by this standard permit in order to ensure that cumulative emissions do not result in adverse off-property impacts. It should be noted that proposed subsection (1)(R) states that registrations for the PBR for rock crushers would no longer be approved by the TCEQ after issuance of this standard permit.

Public Notice Requirements

Proposed section (2) of this standard permit requires that owners and operators of rock crushers authorized by this standard permit provide public notice. The standard permit public notice will allow for local communities to be informed of proposed rock or concrete crusher projects. The public will have the opportunity to submit comments to the agency and to be informed on the outcome of the standard permit review. The public notice will not, however, allow for the public to request a contested case hearing, as rock and concrete crushers meeting the requirements of this standard permit have been demonstrated to meet all air permitting requirements, including passing a health effects review.

Proposed subsection (2)(A) states that the public notice requirements in 30 TAC Chapter 39, Subchapter H, Applicability and General Provisions, and Subchapter K, Public Notice of Air Quality Applications, do not apply. Facilities authorized by this standard permit would be subject to the public notice requirements as set forth in section (2) of this standard permit, which are based on the public notice requirements established for the Air Quality Standard Permit for Concrete Batch Plants With Enhanced Controls.

Proposed subsection (2)(B) requires the applicant to publish notice of intent to construct a crusher no later than the 30th day after the date the applicant receives written notice from the executive director that the application is technically complete or the 75th day after the date that the executive director receives the application. The applicant must publish notice at least once in a newspaper of general circulation in the municipality in which the crusher is proposed to be located or in the municipality nearest to the proposed location of the crusher, as required by proposed subsection (2)(C). If the elementary or middle school nearest to the proposed crusher provides a bilingual education program as required by Subchapter B, Chapter 29, Texas Education Code, the applicant must also publish the notice at least once in an additional publication of general circulation in the municipality or county in which the crusher is proposed to be located that is published in the language taught in the bilingual education program. This requirement is waived if such a publication does not exist or if the publisher refuses to publish the notice. Proposed subsection (2)(D) requires that the notice include: 1) a brief description of the proposed location and nature of the proposed crusher; 2) a description, including a telephone number, of the manner in which the executive director may be contacted for further information; 3) a description, including a telephone number, of the manner in which the applicant may be contacted for further information; 4) the location and hours of operation of the commission's regional office at which a copy of the application is available for review and copying; and 5) a brief description of the public comment process and the mailing address and deadline for filing written comments.

Proposed subsection (2)(E) requires that the applicant post signs on the site of the proposed facility. Requirements for these signs, including size and specific information to be made available, are provided in paragraphs (2)(E)(i)-(vi). Proposed subsection (2)(F) requires that the signs be in place by the date of the newspaper publication and remain in place and legible throughout the public comment period. Proposed subsection (2)(G) provides direction regarding the placement of signs. Proposed subsection (2)(H) requires that alternate language signs be included for those crushers in close proximity to schools having a bilingual program required by Chapter 29 of the Texas Education Code or schools that have waived out of such a required bilingual education program under the provisions of 19 TAC § 89.1205(g). Additional requirements for the alternate language signs are in paragraphs (2)(H)(i)-(vi).

As stated in proposed subsection (2)(I), the public comment period begins on the first date notice is published under subsection (2)(B) and extends to 30 days after the publication date. As required by proposed subsection (2)(J), the executive director will approve or deny the standard permit registration not later than the 30th day after the end of the public comment period. The executive director will base the decision on whether the representations made in the application meet the requirements of this standard permit. The executive director will consider all comments received during the public comment period in determining whether to approve the registration. If the executive director denies the registration, the executive director will state the reasons for the denial and any modifications necessary for the proposed crusher to qualify for the authorization. Proposed subsection (2)(K) specifies that the executive director will issue a written response to any public comments received related to the standard permit at the same time as or as soon as practicable after the executive director grants or denies the application. Issuance of the response after the granting or denial of the registration does not affect the validity of the executive director's decision to grant or deny the registration. The executive director would mail the response to each person who filed a comment and make the response available to the public.

Operational Requirements

Proposed section (3), Operational Requirements, outlines technical requirements that all crushers must meet.

In order to ensure that there are no adverse off-property impacts, proposed subsection (3)(A) would limit throughput at the primary crusher to a maximum of 200 tons per hour (tph), and subsection (3)(B) would require a minimum distance of 200 feet (ft.) from any property line. To help prevent nuisance conditions, the distance to a single or multi-family residence, school, or place of worship is specified in proposed subsection (3)(C) as 1,000 (ft.). The distance is to be measured between the closest points of the facility and the residence, school or place of worship. This subsection would also specify that the distance requirements are established at the time the standard permit application is filed with the commission.

Proposed subsection (3)(D) establishes a separation distance between any crushing facility authorized under this standard permit and either another additional operating crushing facility, concrete batch plant (CBP), or hot mix asphalt plant (HMAP) to help ensure that cumulative emissions do not result in adverse off-property impacts. If this distance cannot be met, then the crushing facility authorized under this standard permit shall not operate at the same time as the additional crushing facility, CBP, or HMAP. The distance is to be measured between the closest points of the facilities of concern. Distance requirements for all associated sources, as defined in subsection (1)(A), would be required by subsection (3)(E) to be at least 100 ft. from the property line as measured from the closest points between the stockpile or road and the nearest property line.

In order to limit the amount of emissions, proposed subsection (3)(F) restricts the facilities authorized by this standard permit to one primary crusher, one secondary crusher, one vibrating grizzly, two screens, associated conveyors, and one internal combustion engine (or combination of engines) of no more than 1,000 horsepower. As stated in proposed subsection (3)(G), the crusher, associated facilities and associated sources (excluding stockpiles) may not operate for more than an aggregate of 2,640 hours in any rolling 12-month period. When the operating hours (2,640) for the site have been exhausted, the owner or operator shall not use a standard permit to operate another rock crusher on the site. Proposed subsection (3)(H) designates the time of operation to be between one hour before official sunrise and one hour after official sunset.

Proposed subsection (3)(I) designates that the rock crushers shall be equipped with a runtime meter to ensure compliance with the requirement concerning operating hours. Criteria for emission controls are defined in subsection (3)(J), which would require all crushing facilities to have properly mounted spray bar equipment on the inlet and outlet of all crushers, all shaker screens, and at all material transfer points. These devices are to be used as necessary to maintain compliance with all TCEQ regulations.

Proposed subsections (3)(K) and (L) address performance demonstrations for the facility. All crushing facilities authorized under this standard permit will be limited to no visible emissions at the property line that exceed a cumulative 30 seconds over a six-minute period as determined by the U.S. Environmental Protection Agency (EPA) Test Method (TM) 22 from all crushers, associated facilities, associated source, and in-plant roads and work areas associated with the plant. Additionally, according to EPA TM 9, opacity of emissions from any transfer point on belt conveyors or any screen shall not exceed 10 percent and from any crusher shall not exceed 15 percent, averaged over a six-minute period. The performance expectations are listed for compliance demonstrations with the conditions of the standard permit and prevention of nuisance conditions. Visible emission limitations and opacity requirements ensure that both the operators and TCEQ field investigators can clearly understand how to demonstrate compliance with the rules and regulations of the commission.

Proposed subsections (3)(M) and (N) help ensure compliance with subsection (3)(L). Subsection (3)(M) would require that dust emissions from road and traffic areas directly associated with the operation of the rock crusher be minimized by covering or treating them with dust-suppressant materials, dust-suppressant chemicals, watering, or paving. Similarly, subsection (3)(N) would require that dust from stockpiles be controlled by watering, dust-suppressant chemicals, or covered as necessary to minimize emission from these sources. Proposed subsection (3)(O) limits raw material and product stockpiles to a maximum height of 45 ft.

Proposed subsection (3)(P) states that a weigh hopper or scale belt is to be used to determine the mass of material to be processed by the crushing facility to ensure compliance with throughput requirements. Proposed subsection (3)(Q) states that the crushing facility may relocate on the same site without reauthorization as long as the 1,000-ft. distance from any residence, school, or place of worship in existence at the time of the move is maintained.

V. PROTECTIVENESS REVIEW

Dispersion Modeling and Distance Limits

The rock and concrete crushing standard permit team developed representative worst-case operating scenarios to be evaluated by dispersion modeling. Pollutants evaluated were particulate matter (PM), particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀), PM_{2.5}, silica, and products of combustion from the engines, including sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen dioxide (NO₂), and PM₁₀. Impacts were obtained using the EPA Industrial Source Complex (ISC) model. The model's output was used as the basis to develop the distance limits for the standard permit.

The operating scenarios consisted of a generic configuration of a 200 tph rock crushing operation. All rock crushing equipment emissions, including drop points, screens, crushers, conveyers, and stockpiles, were characterized as three circular area sources with heights of 1 meter, 3 meters, and 6 meters. The radius of the circular area sources was based on the areal coverage of the stockpiles.

The emissions of the sources were based on the maximum plant throughput of 200 tph operating for 2,640 hours per year. Stockpile emissions were evaluated as being active over the entire year (8,760 hours per year) with emissions controlled in accordance with the operational requirements stated in subsections (3)(L) and (3)(N). Thus, the emissions used in the air dispersion model reflect emission reductions for the use of water sprays and watering stockpiles. Because the sources are all low-level fugitives, the emissions modeled were adjusted by 40 percent to account for increased dispersion due to plume meander and spreading found to exist in conditions of stable atmosphere and low wind speeds. A study of monitoring data collected throughout the state indicates that this factor provides a good correlation between the collected data and the ISC model for the low-level fugitive emissions indicative of this type of facility.

Because there is no set "property line" for this standard permit, the receptor grid started at the edge of a circle encompassing all sources and continued out in 25 meter increments along 10 degree radial profiles sufficiently far to determine that the emissions would be below the National Ambient Air Quality Standard (NAAQS) protectiveness requirements in any, and every, direction.

The TCEQ staff used five years of meteorological data for a single location in lieu of evaluating multiple regional meteorological data sets. The rationale that the staff considered in making this decision was that the source releases are low-level fugitives and that the sources would be evaluated in multiple orientations; therefore, five years of data would provide representative worst-case meteorological parameters for fugitive impacts (low wind speed and stable atmospheric conditions). The meteorological data for this analysis consisted of surface data from Austin and upper-air data from Victoria for the years 1983, 1984, 1986, 1987, and 1988. Thus, since this analysis is primarily for short-term concentrations, this five-year set would include worst-case short-term meteorological conditions that could occur anywhere in the state.

Because all the emission sources were characterized as low-level fugitives, the emissions would be terrain following. Therefore, a reasonable worst-case evaluation was to address only flat terrain. The staff used both urban and rural dispersion coefficients with the worst-case result for each case evaluated used as the defining condition. Staff did not consider building downwash for this analysis because typically there are no downwash structures involved and this is not applicable for area source modeling. The point source representation of engines is a minor source at rock crushing sites. No downwash was assumed for this emission point since the stack exit velocity and the stack exit temperature generally results in a plume that escapes downwash effects.

Results from the air dispersion modeling described above show that the maximum ground level emission

