

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

FINAL DRAFT STAFF REPORT

Proposed Amendments to Rule 2280 (Portable Equipment Registration)

November 20, 2018

Prepared by: Jason Lawler, Senior Air Quality Inspector

Reviewed by: Anna Myers, Senior Air Quality Specialist
Ryan Hayashi, Director of Compliance
Morgan Lambert, Deputy APCO

I. SUMMARY

The San Joaquin Valley, in adherence with applicable state laws instituted under SB705 (2003 Florez), has the toughest restrictions on agricultural burning in the California. The San Joaquin Valley Air Pollution Control District (District) regulations have phased out the burning of all field crops (with the exception of rice), almost all prunings, and almost all orchard removals. The District also operates a comprehensive Smoke Management System, which only allows the limited amount of burning that is still permissible to take place on days with favorable meteorology and in amounts that will not cause a significant impact on air quality.

Until 2014, the restrictions imposed by the District resulted in an 80% reduction in the open burning of agricultural waste. The exceptional drought conditions that the Valley experienced from 2012 to 2016 resulted in hundreds of thousands of acres of orchards, vineyards and other agricultural crops being fallowed or removed. These conditions, paired with the demise of the biomass industry which had previously provided the primary alternative to agricultural burning for a significant amount of the agricultural waste generated in the Valley, has created a severe waste disposal issue. Additionally, there are currently no long-term federal or state funding commitments to support the operation of biomass facilities or development of alternatives to open agricultural burning. The combination of these factors has resulted in an increase in open burning over the past several years and threatens the District's ability to continue to maintain broad restrictions on open burning of agricultural waste into the future due to the lack of feasible alternatives capable of handling the volume of agricultural waste generated in the Valley each year.

In November 2015, the District's Governing Board directed staff to take actions aimed at short- and long-term measures to alleviate the effect on agricultural growers of the

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biomass capacity shortfall in the Valley and to identify cleaner alternatives to agricultural open burning. As a part of our efforts to identify and advance cleaner alternatives to open burning of agricultural waste, in November 2017 the District convened the Central Valley Summit on Alternatives to Open Burning of Agricultural Waste to bring together Valley growers, researchers/experts, representatives from the biomass power industry, representatives from new and developing technology vendors, and Valley stakeholders.

Based on the discussions at the Summit, it was determined that air curtain burn boxes (ACBB) may serve as a feasible alternative to significantly reduce emissions from open burning of agricultural and other wood waste materials. Towards that end, in February 2018, the District's Governing Board directed staff to explore the feasibility of utilizing ACBB to dispose of agricultural wood waste materials.¹

The novel approach to utilize portable ACBB on agricultural fields as a cleaner alternative to the outdoor open burning of agricultural wood waste materials presents a few administrative challenges. Currently, ACBB operating in the Valley require stationary source permits to ensure compliance with local and federal requirements. Traditional stationary source permitting can be administratively burdensome when applied to portable equipment, which operates for short durations in many unspecified locations across the Valley. To address this issue, the District adopted a portable equipment registration program, District Rule 2280, in 1994. The portable equipment registration program provides a voluntary alternative to stationary source permitting to facilitate the use of portable equipment without undue administrative hurdles, while still ensuring compliance with air quality regulations. Given the portable nature of ACBB operating to provide an on-field alternative to open burning and the various locations at which they will operate, the most practical way to regulate them is through portable equipment registration.

Before the District can issue portable equipment registrations for ACBB, amendments to the current rule are necessary. District Rule 2280 – Portable Equipment Registration, explicitly details each source category that qualifies to be registered under the rule. Engines, both diesel and spark-ignited, are one of the source categories in the current rule, but the rule limits the types of equipment the engines can be used in conjunction with, and does not include ACBB. The rule also does not include a source category for the ACBB themselves, meaning neither the ACBB or the engines used to power them can be registered. Therefore, the amendments will include expanding the source category for engines to allow them to be used in conjunction with ACBB, as well as create a new source category for ACBB and establish new regulatory requirements for them.

While making amendments to Rule 2280 for the inclusion of ACBB, there are a number of other administrative changes, including the removal of relic language and outdated requirements. In particular, the diesel engine requirements listed in the current rule have since been superseded in 2011 by the California Air Resources Board's (CARB) Airborne

¹ SJVAPCD. (2018, February 15). *Governing Board Agenda Item, February 15, 2018: Report and Recommendations from the Central Valley Summit on Alternatives to Open Burning of Agricultural Waste*. Retrieved 10/9/18 from http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Minutes/2018/february.pdf

Toxic Control Measure (ATCM) for Diesel Particulate Matter from Portable Engines.² During the amendment process, the District is proposing to remove the outdated diesel engine requirements and replace them with a reference to CARB's ATCM. These changes would have no impact on existing registration holders, whom are already required to meet CARB's ATCM requirements.

II. BACKGROUND

A. Source Category

Rule 2280 is an administrative rule that establishes standards and provides a mechanism for registration of certain portable emission units for operation at various, unspecified locations throughout the District. Affected parties include owners and operators of various types of portable equipment as well as companies that offer portable equipment for rental within the District. Portable equipment is generally intended to be used for short periods of time at many different locations throughout the District, or even the state. It would not be reasonable or feasible to require an operator to obtain stationary source permits for each location where the equipment is operated. Since being adopted in 1994, Rule 2280 has provided a common sense alternative to traditional stationary source permits for certain, qualifying types of portable equipment.

B. Current Rule 2280

District rule 2280 was last amended in 1996 and sets the standards for each source category eligible to receive a District portable equipment registration. Source categories that are eligible for a portable equipment registration under the current rule include confined and unconfined abrasive blasting operations, Portland concrete batch plants, sand and gravel screening equipment, rock crushing equipment, and unheated pavement crushing and recycling operations. Portable equipment registrations may also be issued for spark-ignited or diesel-fired piston-type internal combustion engines that are used in conjunction with well-drilling, service, or workover rigs, power generation, pumps, compressors, pile drivers, welding, cranes, or wood chippers.

A set of specific operating requirements are established in the rule for each source category. These requirements vary from one source category to the next, but can include opacity limitations, emission control device requirements, throughput limitations, best management practices, and any applicable requirements from other state and federal regulations. For spark-ignited and diesel-fired engines, Rule 2280 also includes emissions standards which must be met for an engine to be eligible for a portable registration.

² California Air Resources Board. (2011, February 19). *Final Regulation Order: Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater*. Retrieved 10/9/18 from <https://www.arb.ca.gov/portable/perp/perpatcm.pdf>

The rule also establishes the necessary administrative facets to implement and enforce the District's portable equipment registration program. It outlines the registration process, providing the timeframes and procedures for issuing or denying a registration. A generalized set of notification and reporting requirements are established that all operators must follow to demonstrate compliance. Safeguards are also put in place to prevent portable equipment from causing severe short-term air quality impacts and public nuisance by restricting their proximity to schools and setting daily and annual emission limits.

C. Need to Facilitate Alternatives to Open Burning

The San Joaquin Valley has the most stringent regulations on open agricultural burning in the country. In 2003, SB 705 was adopted,³ which required the phase-out of open agricultural burning for crop types where an economically feasible alternative disposal method was available. In adherence with SB 705, from 2003 to 2012, open burning of agricultural waste had been reduced by over 80% in the San Joaquin Valley.

Since the passage of SB 705, the biomass industry continues to be the primary alternative to open burning in the Valley. The biomass industry is primarily the product of the Public Utility Regulatory Policy Act (PURPA) which was enacted in 1978 at the height of the energy crisis to promote the use of alternative nonutility power generation. Today these facilities are fully depreciated and have lost, or are nearing the ends of, their long-term contracts to sell their power to the utilities. In addition, biomass facilities are facing numerous obstacles to remain in operation including price disadvantage, demand for intermittent power instead of baseload power, and lack of federal and state funding.

Much has changed in the energy markets since PURPA was implemented. Natural gas has replaced oil for electricity generation, and supplies of natural gas have increased, driving down the wholesale cost of electricity. California has adopted a Renewable Portfolio Standard (RPS) that requires 33% of the power that is purchased by utilities be renewable. This has driven competition to fill the renewable energy needs of the state. Under the RPS, Investor Owned Utilities (IOUs) have tended to favor lower cost intermittent sources of renewable power, such as solar and wind. This has left the biomass industry in a position where the power that they produce is not desirable, since most biomass plants provide baseload power instead of intermittent power, and the current rate being paid for power does not allow them to remain viable.

Since 2012, six Valley biomass facilities have shut down operations and now only five remain in operation. In 2015, the District took actions aimed at short- and long-term measures to alleviate the effect on agricultural growers of the biomass capacity shortfall in the Valley and to identify other alternatives to agricultural open burning. The District

³ SB 705, Florez. (2003, September 22). *Air quality: agricultural burning: San Joaquin Valley Unified Air Pollution Control District*. Retrieved 10/10/18 from: http://www.leginfo.ca.gov/pub/03-04/bill/sen/sb_0701-0750/sb_705_bill_20030922_chaptered.html

convened a workgroup with agricultural representatives to explore and advance waste disposal techniques as alternatives to open burning and traditional biomass power plants. In November 2017, the District held the Central Valley Summit on Alternatives to Open Burning of Agricultural Waste. Alternatives discussed during the Summit included soil re-incorporation of agricultural waste, composting, conversion of agricultural waste into electrical power or fuels, biochar plants, on-site/portable power production for electrical generation and irrigation well pump power, and air curtain incineration.

D. Air Curtain Burn Boxes

Air curtain burn boxes when used to dispose of agricultural wood waste provide significant emissions reductions from traditional open burning of agricultural waste. An ACBB is a trailer or skid-mounted firebox with vertical refractory-lined walls that is equipped with an air manifold and blower to provide a high velocity curtain of air directed over the top of the firebox. When materials are ignited using an approved ignition method, and burned inside the firebox, the air curtain traps particulates and recirculates them within the firebox to be re-burned. Emissions studies⁴ have shown ACBB to be over 80% cleaner than open burning of wood waste, giving them the potential to manage emissions from the disposal of agricultural waste very effectively.

E. State ATCM for Diesel PM from Portable Engines

Prior to the passage of the ATCM, operators of portable diesel engines with a District Portable Equipment Registration were required to comply with the source category requirements in Rule 2280 for diesel-fired engines. Rule 2280 required all diesel engines greater than 50 brake horsepower (BHP) have the engine timing retarded by at least 4 degrees from the manufacturers standard timing, and limited NOx emissions to less than 10 grams per BHP (equivalent to 700 ppm @ 15% O2) if the engine was naturally aspirated, or 7.2 grams per BHP (equivalent to 500 ppm @ 15% O2) if the engine was turbocharged.

In 2011, CARB passed the ATCM for Diesel Particulate Matter from Portable Engines, which set new statewide requirements for portable diesel-fired engines greater than 50 BHP. The regulation applies to all portable and transportable diesel engines, including those with District portable equipment registrations. Although the purpose of the ATCM was to control diesel particulate emissions, it also indirectly regulated NOx and other criteria pollutant emissions from portable diesel engines. By requiring the phase-out and replacement of non-certified diesel engines, the ATCM has ensured that all portable diesel engines still in service today meet either a federal or California standard for newly manufactured engines pursuant to 40 CFR Part 89, Part 86, or the equivalent categories in Title 13 of the California Code of Regulations. In addition to PM, the

⁴ SJVAPCD. (2017, April 4). *Air Curtain Incinerator Emission Factors Determination*. Retrieved 10/10/18 from: https://www.valleyair.org/busind/pto/emission_factors/Criteria/Criteria/Air-Curtain-Incinerators/EF-Determination-Analysis.pdf

federal and state engine standards under these sections also establish limits on NO_x, VOCs, and CO.

III. DRAFT AMENDMENTS TO RULE 2280

Draft amendments would expand the rule applicability to include ACBB and make administrative changes, including removing outdated language and requirements, and to clarify requirements for diesel-fired portable engines.

Applicability (Section 2.0)

Section 2.3 – Spark ignition, or diesel-fired piston-type internal combustion engines

Engines greater than 50 BHP are eligible for a District portable equipment registration if they are used in conjunction with one of the types of operations listed in sections 2.3.1 through 2.3.8. ACBB, which were previously unregulated by this rule, are being proposed as a new source category (See Section 2.6). These devices commonly include a diesel-fired engine, which runs the fan necessary to generate the air curtain. Therefore, a new section 2.3.9 is proposed to allow the engines used in conjunction with ACBB to also be eligible for portable equipment registrations.

Section 2.6 – Air Curtain Burn Boxes

Air curtain burn boxes are currently required to operate under a District issued stationary source permit. While this system works well for a unit operated at one stationary source, it is not designed to efficiently allow the operation of a portable unit for short durations at many unspecified locations throughout the Valley. In 1994, the District adopted Rule 2280 to create a less administratively burdensome system for engines and equipment that operate in this manner. Allowing ACBB to be utilized at various locations throughout the valley with a portable equipment registration will facilitate their use as cleaner alternative for the disposal of agricultural and other woody wastes which would have been otherwise disposed of through open outdoor burning.

Definitions (Section 3.0)

Several new definitions pertinent to the operation of ACBB were added. Most of these refer to existing definitions already established in other District rules.

Section 3.2 – Air Curtain Burn Box

A new definition is proposed which describes the type of equipment that will be included in the new source category for air curtain burn boxes. The definition is intended to include the aboveground self-contained burn box style air curtain devices, which have refractory lined walls. The definition does not include the trench style air curtain

devices, which only provide the air curtain and still require a trench or pit be constructed in the ground to contain the material being burned. See the draft rule for proposed definition language.

Registration Process (Section 4.0)

Section 4.3 – Timeframe for issuing, denying, or deeming an application incomplete.

The proposed amendment to section 4.3 would update rule language to clarify the existing 30-day timeframe and would remove relic language. The current rule allows a longer 90-day timeframe during the first 6 months following adoption of the rule, after which the timeframe becomes 30-days. Since Rule 2280 was adopted in 1994, the extended processing time during the first six months is no longer relevant.

Source Category Requirements (Section 5.0)

Section 5.3 – Diesel fired piston type internal combustion engines

Draft amendments would update this section to remove outdated engine requirements and replace them with references to the CARB ATCM, which now establishes the emission requirements for portable diesel engines in California.

Section 5.7 – Air Curtain Burn Boxes

Draft amendments would create this new section of the rule to establish the operating requirements for air curtain burn boxes as a new source category under the rule. These would include requirements from applicable federal subparts, District rule requirements, and best management practices. See the draft rule for the full language of the proposed requirements.

IV. ANALYSES

A. Emission Reduction Analysis

Proposed amendments to District Rule 2280 would include updates to replace the outdated emissions requirements for diesel-fired engines in the current rule with a reference to the requirements in the ATCM. The ATCM requirements are more stringent than the current rule, however, operators have already been required to comply with the ATCM since its adoption in 2011.

Proposed amendments would also allow the District to issue portable equipment registrations for ACBB, which could be used as an alternative to open burning of woody waste materials. The rule amendments would not change the restrictions already in place on open burning, nor would they expressly require the use of ACBB. The

registration program is an optional avenue in lieu of traditional permitting to reduce the administrative burden for owners of portable units that operate these units for short durations at many locations through the Valley.

Therefore, the proposed amendments to Rule 2280 will not cause any measurable overall change in future year emissions reductions.

B. Cost Effectiveness Analysis

Pursuant to California Health & Safety Code (CH&SC) Section 40920.6(a), prior to adopting rules or regulations to meet the requirement for best available retrofit control technology (BARCT), the District shall perform a cost effectiveness analysis. The proposed amendments do not implement BARCT and therefore a cost effectiveness analysis is not required.

C. Socioeconomic Analysis

Pursuant to CH&SC Section 40728.5(a), the District is required to conduct a socioeconomic analysis of proposed rules or rule amendments that will significantly affect air quality or emissions limitations prior to rule adoption. The proposed amendments have neither effect, and therefore a socioeconomic analysis is not required for this rule amendment project.

D. Rule Consistency Analysis

Pursuant to CH&SC Section 40727.2, prior to adopting, amending, or repealing a rule or regulation, the District is required to perform a written analysis that identifies and compares the air pollution control elements of the rule or regulation with corresponding elements of existing or proposed District and EPA rules, regulations, and guidelines that apply to the same source category. The elements analyzed are emission standards, monitoring and testing requirements, and recordkeeping and reporting requirements.

Based on the following analysis, District staff found that the proposed amendments to Rule 2280 would not conflict with any District or federal rules, regulations, or policies covering similar portable sources.

1. District Rules

Air Curtain Burn Boxes could be subject to other District rules including:

- Rule 2010 (Permits Required),
- Rule 2201 (New and Modified Stationary Source Review Rule),
- Rule 4001 (New Source Performance Standards),
- Rule 4101 (Visible Emissions),
- Rule 4102 (Nuisance),

- Rule 4201 (Particulate Matter Concentration),
- Rule 4202 (Particulate Matter Emission Rate),
- Rule 4301 (Fuel Burning Equipment), and
- Rule 4302 (Incinerator Burning)

The above-listed rules are not in conflict nor are they inconsistent with the requirements of draft Rule 2280.

2. Federal Rules, Regulations, and Policies

There are no applicable federal Control Technique Guidelines (CTG), Alternative Control Techniques (ACT), National Emission Standards for Hazardous Air Pollutants (NESHAP), Best Available Control Technology (BACT), or Maximum Achievable Control Technology (MACT) guidelines for ACBB.

There are two New Source Performance Standards (NSPS), which apply to ACBB. Units that combust at least 35, and up to 250, tons per day are subject to 40 CFR 60 Subpart CCCC. Units that combust less than 35 tons per day are subject to 40 CFR 60 Subpart EEEE. Both subparts have the same requirements for ACBB, which consist of opacity limitations, monitoring, and recordkeeping.

During normal operation, emissions from the ACBB shall not exceed 10% opacity, as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values. During start-up (within the first 30 minutes of operation), emissions shall not exceed 35% opacity, over the same averaging period. These requirements have been satisfied in the draft rule language by establishing an opacity limit of 10% for normal operation, when averaged over three hours as described in the CFR, and by applying during all operation the 20% opacity limit from District Rule 4101, which is more stringent than the 35% start-up limit in the CFR.

The NSPS Subparts require an initial Method 9 observation, and annual observations each year thereafter, by a certified observer. Records of method 9 observations must be maintained and reported to the District. All records must be maintained on-site for five years. Revised Proposed Rule 2280 has incorporated these monitoring and testing requirements for ACBB.

EPA Policy on Recordkeeping: EPA has a policy that mandates stationary sources keep and maintain records for at least five years. Revised Proposed Rule 2280 is consistent with EPA recordkeeping policy.

3. Rule Consistency Analysis Conclusion

Based on the above analysis, District staff concludes that Revised Proposed Rule 2280 is consistent with other District rules and is not in conflict with said rules.

Further, the proposed rule is consistent with EPA rules, regulations, and guidelines that apply to the same source category.

E. Environmental Impact Analysis

The amendments proposed to District Rule 2280 include the need to update to remove and replace outdated requirements as CARB adopted a portable ATCM in 2011 for diesel internal combustion engines that superseded the diesel engine requirements of Rule 2280. The amendments clarify diesel engines must comply with portable ATCM requirements, as is currently in practice. The amendments also include the addition of ACBB as a source category in the rule and capable of being registered as portable equipment with the District. As discussed in the staff report, the ACBB are designed principally as a pollution control device. There would be a reduction in net criteria pollutant emissions and health risk impact.

Based on the District’s investigation, substantial evidence supports the District’s conclusion that the amendments will not cause either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment, and as such is not a “project” as that term is defined under the California Environmental Quality Act (CEQA) Guidelines Section 15378. In addition, substantial evidence supports the District’s conclusion that assuming the amendment is a “project” under CEQA, it will not have any significant adverse effects on the environment.

In addition, according to Section 15061(b)(3) of the CEQA Guidelines, a project is exempt from CEQA if, “...the activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.” As such, for this additional reason, the District finds that the rule amendment project is exempt from CEQA.

V. RULE DEVELOPMENT PROCESS

A. Public Scoping Meeting for Rule 2280

The District hosted a public Scoping Meeting to discuss potential amendments and receive public comments on September 13, 2018, followed by a public comment period ending at 5:00 PM on September 27, 2018. All significant comments received have been reviewed and incorporated into the draft staff report as appropriate.

B. Public Workshop for Rule 2280

The District held a public workshop to discuss draft amendments and receive public comments on October 24, 2018, followed by a public comment period ending at 5:00 PM on November 7, 2018. All significant comments received have been reviewed and incorporated into the draft staff report as appropriate.

C. Public Hearing for Rule 2280

In accordance with CH&SC Section 40725, the proposed amendments to Rule 2280 and the final draft staff report are being publicly noticed prior to the Governing Board public hearing to consider adoption of the proposed amendments, and made available on November 20, 2018. All significant comments received will be considered and incorporated into the proposed rule and staff report, as appropriate. The public is also invited to provide comments on the proposed amendments to Rule 2280 and staff report during the public hearing on December 20, 2018, for proposed adoption of this rule.

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