


**San Joaquin Valley
Air Pollution Control District**
Permit Services

Temporary Portable Supplemental Equipment used at Aggregate, Hot Mix Asphalt, and
Concrete Batch Plants

Approved By:  Arnaud Marjollet Director of Permit Services	Approval Date: <u>August 12, 2014</u> Revision Date: <u>August 15, 2017</u>
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I. Purpose:

Government agencies such as the California Legislature, Caltrans, and Calrecycle have all promoted the recycling of concrete and asphalt rubble. The recycling of these materials will assist in conserving natural resources, such as aggregate and asphalt oil, and assist in reducing the disposal of bulk waste materials in landfills. Greenhouse gas emissions may also be reduced by decreasing material transportation distances and operation of raw material processing equipment. The cost to produce concrete and asphalt will also be reduced from the use of these recycled materials.

SB 420 in 2006 (Public Resources Code section 42701) encourages Caltrans to use recycled materials in road paving. AB 574 from 2005 (Public Resources Code sections 16000-16004) encourages the use of recycled concrete materials. As a result, Caltrans specifications now allow up to 100% recycled materials in road base and related applications. While Caltrans has broadened the use of recycled materials in road base, it is now beginning to focus on allowing greater use of recycled materials in pavements and structures. AB 812 in 2012 (Public Resources Code Section 42704) incentivizes Caltrans to develop specifications to allow up to 40% reclaimed asphalt pavement (RAP) in new pavements by January 2014.

Consequently, the ability to readily recycle concrete and asphalt rubble is essential to meet increasing demand for recycled materials in public and private works projects. Industry is requesting the ability to bring on site and operate additional processing equipment to meet this demand. While facilities may utilize their own portable equipment, they typically either rent the necessary supplemental processing equipment or hire a 3rd party contractor to perform the work at their site on an "as needed" basis. Once the job is complete, this supplemental processing equipment is usually removed from the stationary source.

The purpose of this policy is to establish standardized procedures and permit conditions for issuing Authority to Construct permits for short term, portable supplemental processing equipment used at Aggregate processing plants, Hot Mix Asphalt plants, and Ready Mix Concrete plants.

This policy will allow an aggregate, hot-mix asphalt, or ready mix concrete processing facility to obtain a District stationary permit for portable supplemental processing or recyclable construction material processing equipment with the flexibility in the equipment description to allow the use of a variety of processing equipment to provide the same services at various times. The intent is to avoid the requirement of obtaining a new permit each time a different short term portable operation is utilized at a stationary source to perform the same type of work which will not result in an increase in potential emissions.

II. Background:

Aggregate processing facilities, hot mix asphalt plants, and ready mix concrete plants occasionally have the need to bring additional equipment on site to supplement the stationary source activities for unusually large or specialty product jobs. In addition, recyclable construction materials (such as recycled asphalt pavement or recycled concrete) may be brought on these facilities for processing, which may be used to supplement regular aggregate feed materials. This supplemental equipment typically remains on site for a few months until the particular job that required the additional capacity is finished. The facility may hire an independent contractor to bring this portable supplemental processing equipment on site, rent the necessary portable equipment, or utilize portable equipment they own. When the job is finished, the equipment is removed from the stationary source.

This supplemental equipment brought to the stationary source typically has CARB Portable Equipment Registration Program (PERP) registrations. However, since this equipment supplements the stationary source operation, District Policy SSP 2150 will not allow the use of this supplemental equipment at District permitted stationary sites without first obtaining stationary source permits for the equipment in question.

The aggregate processing industry has a need to be able to bring this processing equipment on site to supplement their operations on an “as needed” basis to meet their customer demands. The aggregate processing industry has agreed to obtain stationary source permits for this supplemental processing equipment, but has asked the District to allow them the flexibility to bring this equipment on site and remove it without having to modify the permit after each short term use due to the variability and availability of the processing equipment for each job.

The District has agreed in principle to the request for this permitting flexibility. This policy will outline the details of how this permitting flexibility will be implemented.

III. Applicability:

This policy applies only to the following supplemental operations:

- Supplemental Portable Aggregate Processing Unit
- Supplemental Portable Recyclable Material Processing Unit

Each IC engine used at a stationary source is subject to the Best Available Control Technology requirements under District Rule 2201 (New and Modified Stationary Source Review Rule) and must undergo a detailed evaluation process before a permit can be issued. Because of the rapidly evolving emission control requirements and the possible health risk associated with the operation of internal combustion (IC) engines, it is not possible to proactively establish BACT requirement related to future permitting actions. Therefore, this policy is **not** applicable to IC engines used to power the subject equipment.

Additionally, the use of California Air Resources Board (CARB) Statewide Portable Equipment Registration Program (PERP) or District Rule 2280 (Portable Equipment Registration) portable registered electric generators powered by IC engines is also not applicable unless such units have been evaluated as part of the stationary source under District Rule 2201 (New and Modified Stationary Source Review Rule) as discussed under District policy SSP-2150 (Allowed Operation of Portable Registered Equipment at a Stationary Source). Therefore, the equipment allowed under this policy shall be powered by electric motors using onsite electrical utilities power unless the alternative electric power source has been evaluated under District Rule 2201 with a valid District stationary source permit.

The scope of this policy is limited to portable, supplemental recycled aggregate material processing operations **powered by electric motors**, of which the primary emissions units are hoppers, crushers, screens, conveyors, and storage piles.

The result of this policy will be the creation of stationary source permits for portable, supplemental recycled material processing operations. The most recent permitting analysis will be based on the worst-case equipment configuration and production scenarios provided by the applicant, and will evaluate the prohibitory rule requirements, the New Source Review Rule requirements and the health risk resulting from each emission unit in the worst-case equipment configuration and potential to emit scenarios.

The resulting permit will be designed around the worst-case equipment configuration and potential to emit scenario, and will include “not to exceed” limitations on the equipment type and quantity, production rates, and emissions rates.

The recycling equipment will operate independently of the permanent aggregate processing equipment and will be brought onsite on an “as needed” basis. Given the transient nature of portable equipment, it is unlikely that the exact units considered in the most recent permitting action will be available for return to the site – making it necessary to install substitute equipment. However, as previously stated, the units brought onsite will operate under the existing permits and will therefore be subject to the same throughput and emission limits as the currently permitted equipment. Therefore, no emission increases will occur and since the health risk assessment for the original permitting action will be conducted assuming the worst case emission rates, no increase in health risk will occur either. Furthermore, as explained above, even if the new equipment were subjected to Best Available Control Technology requirements, no increase in emission control requirements will occur.

Since this portion of the business does not lend itself to the exclusive use of the same emission units, and given that the operation of substitute equipment would not result in more stringent New Source Review requirements or in an increase in health risk, the substitution of emission units shall not to be considered a permitting action under District Rule 2010 provided that the substitute equipment will comply with the conditions of the applicable District permits.

If in the future, changes are made to District Rule 2201 or Best Available Control Technology requirements that affect the emissions units covered under the scope of this document, or any other new applicable requirements affecting said emission units are adopted, the implementation of this policy may be suspended until such time as it is revised to account for the new requirements.

IV. Permit Unit Boundaries:

Portable Aggregate and Recyclable Material Processing Units:

The following equipment is commonly associated with units that a facility may bring on to their site to supplement their stationary source operations or process recyclable construction materials:

- Grizzly feed hopper(s)
- Crusher(s)
- Vibrating multi-deck screen(s)
- Conveyor(s)
- Storage pile(s)

Since the facility may hire a subcontractor, rent from a vendor, or utilize their own equipment to process these special jobs, the equipment configuration at any one time may include all of the equipment listed above, or it may only include a portion of it. Therefore, the following generic equipment description should be used to provide the applicant the necessary flexibility in equipment configurations.

The quantities entered for each equipment type in the equipment description below shall represent the maximum quantity that will be used onsite at the facility.

PORTABLE SUPPLEMENTAL AGGREGATE PROCESSING OPERATION CONSISTING OF UP TO [ENTER QUANTITY] FEED HOPPER(S), UP TO [ENTER QUANTITY] CRUSHER(S), UP TO [ENTER QUANTITY] SCREEN(S), UP TO [ENTER QUANTITY] CONVEYOR(S), UP TO [ENTER QUANTITY] STACKER(S) AND ASSOCIATED STORAGE PILES.

PORTABLE RECYCLABLE CONSTRUCTION MATERIALS PROCESSING OPERATION CONSISTING OF UP TO [ENTER QUANTITY] FEED HOPPER(S), UP TO [ENTER QUANTITY] CRUSHER(S), UP TO [ENTER QUANTITY] SCREEN(S), UP TO [ENTER QUANTITY] CONVEYOR(S) UP TO [ENTER QUANTITY] STACKER(S) AND ASSOCIATED STORAGE PILES.

V. Emission Calculations Procedure:

A. Emission Factors (EF):

The emission factors are taken from the draft Aggregate Permit Processing policy (SSP-1610). It is assumed these emission factors are also applicable to recyclable construction materials processing operations.

Table 1: Aggregate and Recyclable Construction Materials Processing Emission Factors (EF)	
Source	Emission Factor (EF)
Feed Hopper Loading	0.000016 lb-PM ₁₀ /ton of material
Transfer Point (Conveyor or front-end loader drop)	0.000046 lb-PM ₁₀ /ton of material (controlled)
	0.0011 lb-PM ₁₀ /ton of material (uncontrolled)
Material Screening	0.0087 lb-PM ₁₀ /ton of material (uncontrolled)
	0.00074 lb-PM ₁₀ /ton of material (controlled)
Material Crushing	0.0024 lb-PM ₁₀ /ton of material (uncontrolled)
	0.00054 lb-PM ₁₀ /ton of material (controlled)
Source	Emission Factor (EF)
Material Storage Piles	5.27 lb-PM ₁₀ /acre/day or 0.121 lb-PM ₁₀ /1,000 ft ² /day (uncontrolled)
	1.054 lb-PM ₁₀ /acre/day or 0.0242 lb-PM ₁₀ /1,000 ft ² /day (controlled) ¹

¹ The controlled EF is based on the use of a water spray system with a control efficiency of at least 80% as discussed on page 11 of the draft Aggregate Permit Processing Policy (SSP-1610).

B. Emission Calculations:

Daily and annual potential to emit (PE) will be calculated using the equations listed below and at the worst case situation of operating all equipment listed in the equipment description. Emission units may be added or removed from Table 2 as needed to calculate emissions based on the proposed plant configuration and equipment (e.g. crushers, screens, conveyors, stackers, storage pile area, etc.) utilized.

$$\text{Daily PE (lb-PM}_{10}\text{/day)} = \text{Daily Processing Rate (tons/day)} \times \text{EF (lb-PM}_{10}\text{/ton)}$$

$$\text{Annual PE (lb-PM}_{10}\text{/year)} = \text{Annual Processing Rate (tons/year)} \times \text{EF (lb-PM}_{10}\text{/ton)}$$

$$\text{Daily PE (Storage Piles)} = \text{Daily Storage Area (acres or 1,000 ft}^2\text{/day)} \times \text{EF (lb/acres/day or lb/1,000 ft}^2\text{/day)}$$

$$\text{Annual PE (Storage Piles)} = \text{Daily PE (lb/day)} \times \text{Operating Days (days/year)}$$

Table 2: Emission Calculations					
Emissions Unit Description	Processing Rate		EF (Controlled)	Potential to Emit (PE)	
	tons/day	tons/year	lb-PM ₁₀ /ton	lb-PM ₁₀ /day	lb-PM ₁₀ /year
Feed Hopper Loading			0.000016		
Conveyor to Crusher			0.000046		
Material Crushing			0.00054		
Conveyor from Crusher to Screen			0.000046		
Material Screening			0.00074		
Conveyor from Screen back to Crusher			0.000046		
Conveyor from Screen to the transfer Conveyor			0.000046		
Transfer Conveyor to Radial Stacker			0.000046		
Radial Stacker to Storage Pile			0.000046		
Material Processing Total:					
Emissions Unit Description	Storage Area	Operating Days	EF (Controlled)	Potential to Emit	
				lb-PM ₁₀ /day	lb-PM ₁₀ /year
Storage Pile	(acres or 1,000 ft ² /day)	(days/year)	1.054 lb-PM ₁₀ /acres/day or 0.0242 lb-PM ₁₀ /1,000 ft ² /day		
Overall Total (Material Processing and Storage Piles):					

VI. Storage Pile Area Management:

Typically, daily recordkeeping is required to verify compliance with the permit's daily emission limits (DEL) and other enforceable conditions per Section 3.16 of District Rule 2201. However, Section 3.16.2 of District Rule 2201 also says that the DEL must be enforceable in a *practical* manner. DELs for storage piles associated with the operations described in this document are typically written as a maximum foot print area (in square feet) and an emission factor (emissions/square foot). Information provided by industry representatives shows that keeping daily records of the storage pile foot print size is not practical for the following reasons:

- (1) Storage piles are large (up to several acres) and irregularly shaped. Verifying the size of these piles requires several people to spend a considerable amount of time. Moreover, these people would be in proximity to active heavy equipment such as front end loaders and trucks that are also interacting with the storage piles. This creates a significant safety concern. For this reason, many aggregate plants utilize aerial photography to verify storage pile size. Requiring daily flyovers would be cost prohibitive.
- (2) The purpose of an aggregate processing plant is to maintain a level of finished product inventory given projected business demand. The plant operates as much (or as little) as necessary to maintain that level of inventory.
- (3) Finally, some finished product materials degrade over time, so the storage piles are maintained at a fairly constant size to protect product integrity while still maintaining enough inventory to meet market demands.
 - Items 2 and 3 above mean that storage pile sizes do not change very much throughout the year. Industry representatives have provided aerial photography data taken several times throughout a year at a typical aggregate processing plant to show that the total storage pile foot print size does not change much.

Based on the above reasons, the District agrees that keeping daily records of the storage pile footprint size is neither practical nor necessary. Therefore, the permit's storage pile DEL shall be based on the maximum possible storage pile size such that it is impossible or very unlikely that the limit will be exceeded. The permittee will be required to perform measurements to verify compliance with the storage pile DEL at least once each calendar year using aerial photos or other District-approved methods. The method used must clearly identify the storage pile locations and calculated storage pile footprint area.

VII. Permit Fee Schedule:

The equipment associated with portable aggregate and recyclable material processing units are powered by electric motors. Therefore, Rule 3020 under Schedule 1 (Electric Motor Horsepower Schedule) will be used to determine the appropriate annual permit fee schedule. The fee schedule shall be based on the permittee's proposed worst-case equipment configuration using the total combined electric motor horsepower ratings of all the equipment serving the proposed operation at the initial permit application. The facility shall not use equipment where the total combined electric motor horsepower rating exceeds the permittee's initial proposed electric motor horsepower total.

VIII. Standardized Permit Conditions:

The following standardized ATC/PTO conditions that shall be used as a guide for portable supplemental processing equipment used at aggregate plants, hot mix asphalt plants, or ready-mix concrete plants. Please note that these standardized permit conditions are generic in nature, and therefore cannot contain all conditions that may be necessary to ensure compliance with all applicable District rules and requirements. For this reason, it may be necessary to place additional site-specific conditions on these permits.

A. General Permit Conditions:

The following general conditions will be required for all portable supplemental processing unit permits:

- *{98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]*
- *{15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]*
- *All equipment authorized under this permit shall only be powered by electric motors using onsite utility power. [District Rule 2201]*
- *The permittee may use any combination of equipment as long as the equipment in use does not exceed the equipment description and the prescribed operation limits contained in this permit. [District Rule 2201]*
- *Only one processing operation may operate under this permit at any given time. [District Rule 2201]*
- *The processing operation shall function as a single continuous processing operation and have one common input material feeder or feed hopper. [District Rule 2201]*

- *Upon initial startup of the plant, an individual certified to perform EPA Method 9 visible emission observations shall perform an inspection of all conveyor transfer points, crushers, and screens. The initial inspection shall take place at an appropriate time of day depending on plant start time and sunrise. [District Rule 2201]*
- *An individual trained to perform EPA Method 22 visible emission observations shall perform a daily inspection of the facility. Daily inspections shall take place at an appropriate time each day depending on plant start time and sunrise. The duration of Method 22 observations shall not be less than 15 minutes. [District Rule 2201]*
- *The permittee shall provide an initial demonstration of visible emission opacity limits for all equipment moved on site under this permit for which an initial demonstration has not already been performed. This demonstration will only be required for the first time of operation at the facility. The permittee shall keep records of initial demonstration and be able to provide these records upon request by the District. [District Rule 2201]*
- *Water spray equipment that sufficiently wets materials to minimize visible dust emissions shall be installed on all feeders, crushers, and screens. Stockpiles shall be maintained sufficiently wet by appropriate means to maintain compliance with the appropriate visible emission limitations of this permit. Water spray equipment shall be installed on conveying equipment as necessary to provide adequate moisture application to maintain compliance with the appropriate visible emission limitations of this permit. [District Rule 2201]*
- *Spray nozzles shall be turned on, as necessary, to control fugitive emissions from the feeders, conveyor transfer points, screens, and crushers. [District Rule 2201]*
- *All spray nozzles shall be maintained in proper working condition at all times. [District Rule 2201]*
- *The permittee shall maintain aerial photos, site maps, or other District approved records which clearly identify the storage pile locations and calculated total storage pile footprint area (in acres or 1,000 ft²) associated with this permit. The aerial photos, site maps or other District approved records shall be updated at least once every calendar year and shall represent the maximum total storage pile footprint area on site for that year. [District Rule 2201]*

B. Daily Emission Limits:

Daily emission limits (DEL) and other enforceable conditions are required by Section 3.16 of District Rule 2201 to establish and enforce an upper limit on a unit's permissible emissions. A DEL must be enforceable, in a practical manner, on a daily basis.

Portable Aggregate and Recyclable Construction Materials Processing Operations

For the portable aggregate and recyclable construction materials processing operations, the DEL can be established using a single emission factor and the maximum process throughput, in tons per day. The combined emission factor is calculated by using the total daily potential to emit as determined above in Table 2 (Emission Calculations) for "Material Processing Total" and divided by the maximum process throughput rate. The following conditions will be required on the permit:

- *PM₁₀ emissions from this [aggregate or recyclable construction materials] processing operation shall not exceed [X.XX] pounds per ton of material processed. [District Rule 2201]*
- *The total quantity of [aggregate or recyclable construction materials] received and processed shall not exceed [X,XXX] tons in any one day. [District Rule 2201]*

In cases the facility elects to keep its processing rate confidential in accordance with District Rule 1030 (Confidential Information), the DEL can be established as mass emissions limit expressed in pounds of PM₁₀ per day. The following condition will be required on the permit:

- *PM₁₀ emissions from this [aggregate or recyclable construction materials] processing operation shall not exceed [XX.X] pounds in any one day. [District Rule 2201]*

Aggregate or Recyclable Construction Materials Storage Piles

For the aggregate or recyclable construction materials storage piles associated with the portable aggregate or recyclable construction materials processing operations, the DEL is established by conditions limiting the size of the storage piles (in acres) and the emission factor as listed above in Table 1 (Emission Factors) for material storage piles. The following permit conditions will be required on the permit:

- *PM₁₀ emissions from the storage of [aggregate or recyclable construction materials] shall not exceed [X.XX] pounds per [acre or 1,000 ft²] per day. [District Rule 2201]*
- *The total area of [aggregate or recyclable construction materials] storage piles shall not exceed [X.X] [acres or 1,000 ft²] at any time. [District Rule 2201]*

For facilities electing to keep the storage capacity confidential, the following condition will be required on the permit:

- *PM₁₀ emissions from the storage of [aggregate or recyclable construction materials] shall not exceed [X.X] pounds in any one day. [District Rule 2201]*

C. New Source Performance Standards:

The requirements in Title 40, Code of Federal Regulations, Part 60 (40 CFR 60), Subpart OOO, *Standards of Performance for Nonmetallic Mineral Processing Plants*, are applicable to portable nonmetallic mineral processing plants with processing rates greater than 150 ton/hr, which commence construction, reconstruction or modification after August 31, 1983.

§60.672(a), which applies to point sources of emissions routed through an emission control device (such as a crusher served by a baghouse) is split into two requirements. The first, which is applicable to affected facilities (which commenced construction, reconstruction, or modification between August 31, 1983 and April 22, 2008) states that no owner or operator shall cause to be discharged into the atmosphere emissions which contain particulate matter in excess of 0.022 gr/dscf, or that exhibit greater than 7% opacity. The following conditions will be required on the permit for applicable affected facilities:

- *Particulate matter emissions from [emission unit with stack] shall not exceed 0.022 grains/dscf pursuant to Title 40, Part 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) of the Code of Federal Regulations. [District Rule 4001 and 40 CFR §60.672(a)]*
- *Visible emissions from [emission unit with stack] shall not exceed 7% opacity as measured pursuant to Title 40, Part 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) of the Code of Federal Regulations. [District Rule 4001 and 40 CFR §60.672(a)]*

The second requirement in §60.672(a) applies to facilities that commenced construction, reconstruction, or modification on or after April 22, 2008. This requirement eliminates the opacity limit for applicable affected facilities (except for dry control devices on individual enclosed storage bins) but reduces the PM emission limit from 0.022 gr/dscf to 0.014 gr/dscf. The following condition will be placed on the ATC for applicable affected facilities:

- *Particulate matter emissions from [emission unit with stack] shall not exceed 0.014 grains/dscf pursuant to Title 40, Part 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) of the Code of Federal Regulations. [District Rule 4001 and 40 CFR §60.672(a)]*

§60.672(b), which applies to fugitive emissions from any affected facility (except crushers not served by a control device), is also divided into separate requirements for existing sources and for new sources. For existing sources, fugitive opacity shall not exceed 10% for most affected facilities, and 15% for crushers. For new sources, the opacity limits are 7% generally and 12% for crushers. Note that since open storage stockpiles are not included in the list of affected facilities specified in §60.670, these fugitive opacity limits do not apply to the stockpiles, although opacity may be limited under Rule 2201.

Existing Facilities

The following conditions shall be placed on the permits to enforce these requirements for existing facilities:

- *Visible emissions from any [feeder, screen, or conveyor] shall not exceed 10% opacity as measured pursuant to Title 40, Part 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) of the Code of Federal Regulations. [District Rule 4001 and 40 CFR §60.672(b)]*
- *Visible emissions from each crusher shall not exceed 15% opacity as measured pursuant to Title 40, Part 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) of the Code of Federal Regulations. [District Rule 4001 and 40 CFR §60.672(b)]*

New Facilities

The following conditions shall be placed on the applicable ATC to enforce these requirements for new facilities:

- *Visible emissions from any [feeder, screen, or conveyor] shall not exceed 7% opacity as measured pursuant to Title 40, Part 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) of the Code of Federal Regulations. [District Rule 4001 and 40 CFR §60.672(b)]*
- *Visible emissions from each crusher shall not exceed 12% opacity as measured pursuant to Title 40, Part 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) of the Code of Federal Regulations. [District Rule 4001 and 40 CFR §60.672(b)]*