

SAN JOAQUIN VALLEY
AIR POLLUTION CONTROL DISTRICT

ATC APPLICATION REVIEW

Unconfined Abrasive Blasting Operation
(Located Outside a Building, Without a Cabinet)

Engineer /Specialist:

Reviewed By:

Date: June 1, 2016

Facility Name:

Mailing Address:

Location Address:

Contact Name:

Telephone:

Application Number:

Project Number:

Deemed Complete:

Please note that the first part of this evaluation (up through section VII) is intended to determine whether the uncontrolled PM₁₀ emissions from the unit exceed 2 lb-PM₁₀/day or not.

I. PROPOSAL

[Facility Name] is applying for an Authority to Construct (ATC) permit for a new unconfined abrasive blasting operation located outside a building and without the use of a cabinet.

As demonstrated in Section VII of this evaluation, uncontrolled PM₁₀ emissions from this unit exceed 2 lb-PM₁₀/day, and therefore this unit requires a permit in accordance with District Rules 1020, 2010, and 2020.

II. APPLICABLE RULES

Rule 2201	New and Modified Stationary Source Review (August 15, 2019)
Rule 4102	Nuisance (December 17, 1992)
CH&SC 41700	California Health and Safety Code (Emission Limitations)
CH&SC 42301.6	California Health and Safety Code (School Notice)
CH&SC § 41900 thru § 41905	California Health and Safety Code (Sand Blasting Operations)
17 California Code of Regulations (CCR) - Subchapter 6, § 92000 thru § 92540	
Public Resources Code 21000-21177:	California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:	
CEQA Guidelines	

III. PROJECT LOCATION

This facility is located at [street address] in [city name], California.

The applicant states that this facility is [not] located within 1,000 feet of the outer boundary of any K-12 school. Therefore, pursuant to California Health and Safety Code 42301.6, School Notice is [not] required.

IV. PROCESS DESCRIPTION

[Facility Name] is in the business of [state nature of business]. This application is for a confined abrasive blasting operation.

[Describe sand blasting equipment usage]

The equipment will operate a maximum of [xx] hour/day, [xx] day/week, and [xx] week/year.

V. EQUIPMENT LISTING

Blasting Type:

Type :Unconfined (conducted outside an enclosure)

Blasting System:

- Manufacturer : []
- Model : []
- Number of Nozzles : []
- Nozzle Size : [] " inner diameter
- Blasting Material Type : [Sand, Grit, Steel Shot, Other (including glass beads, crushed glass, cut plastic, nutshells, ...)]
- Capacity : [] lb
- Abrasive Material Flow Rate : [] lb/hour

Compressor:

- Manufacturer : []
- Model : []
- Compressor Rating : [] hp
- Air Flow Rate : [] cfm @ [] psi

Equipment Description:

ATC #x-xxxx-x-x: UNCONFINED ABRASIVE BLASTING OPERATION WITH A [XX] LB [MANUFACTURER] [MODEL] BLASTING POT

VI. EMISSION CONTROL TECHNOLOGY EVALUATION

Emissions from this abrasive blasting system result from the impact of the abrasive media on the surface being blasted. Particulate Matter (PM), including particulate with an aerodynamic diameter smaller than or equal to a nominal 10 microns (PM₁₀), is the primary air contaminant resulting directly from this abrasive blasting operation.

In order to minimize PM emissions, the operation will be allowed to use only ARB approved abrasives and blasting methods.

This abrasive operation is conducted outside of an enclosure (building, room), and therefore is classified as unconfined abrasive blasting operation.

Since there is no Particulate Matter control device, the proposed abrasive blasting operation is considered as uncontrolled.

To ensure that the equipment is properly maintained and operated, a permit condition will be listed as follows:

- {4627} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 4102]

VII. CALCULATIONS

A. Assumptions

- Maximum potential emissions are based on operation of the blasting unit [xx] hour/day, [xx] day/year {If the numbers differ from 24 hr/day and 365 day/year, a permit condition limiting the hours and/or days of operation shall be listed on permit, see District Rule 4201 discussion, end of section}
- PM₁₀ is the only pollutant emitted from the operation
- PM₁₀ Emission Factor from the unconfined abrasive blasting operation is from STAPPA/ALAPCO - Table 2-2, Page 2-8 (5/30/91 edition)

B. Emission Factors

For unconfined operations, uncontrolled PM₁₀ Emission Factor (EF) is from STAPPA/ALAPCO (Vol. I) - Table 2-2, Page 2-8, 05/30/91 edition:

{Use one of the following paragraphs as applicable, and delete the others}

For sand used as abrasive blasting material:

$$PM_{10} EF_{Uncontrolled} = 0.041 \text{ lb-PM/lb-abrasive} \times 0.70 \text{ lb-PM}_{10}/\text{lb-PM}$$

$$PM_{10} EF_{Uncontrolled} = 0.029 \text{ lb-PM}_{10}/\text{lb-abrasive}$$

OR

For grit used as abrasive blasting material:

$$PM_{10} EF_{Uncontrolled} = 0.010 \text{ lb-PM/lb-abrasive} \times 0.70 \text{ lb-PM}_{10}/\text{lb-PM}$$

$$PM_{10} EF_{Uncontrolled} = 0.007 \text{ lb-PM}_{10}/\text{lb-abrasive}$$

OR

For steel shot used as abrasive blasting material:

$$PM_{10} EF_{Uncontrolled} = 0.004 \text{ lb-PM/lb-abrasive} \times 0.86 \text{ lb-PM}_{10}/\text{lb-PM}$$

$$PM_{10} EF_{Uncontrolled} = 0.0034 \text{ lb-PM}_{10}/\text{lb-abrasive}$$

OR

For other material (including glass beads, crushed glass, cut plastic, nutshells, ...) used as abrasive material:

$$PM_{10} EF_{Uncontrolled} = 0.010 \text{ lb-PM/lb-abrasive} \times 1 \text{ lb-PM}_{10}/\text{lb-PM}$$

$$PM_{10} EF_{Uncontrolled} = 0.010 \text{ lb-PM}_{10}/\text{lb-abrasive}$$

C. Calculations

As per the California Health & Safety Code § 41900 thru § 41905, abrasive blasting operations are exempt from New Source Review (NSR) rules which were not in effect on January 1, 1974. All New Source Review rules in the eight counties within the District were adopted after January 1, 1974. Therefore, the NSR requirements shall not apply to the abrasive blasting operation. Thus, for the unit involved with this project, BACT, offsets, or NSR public notification will not be required and no Daily Emissions Limitation (DEL) will be imposed.

PM₁₀ Emissions Calculations

This section provides PM₁₀ calculations of Potential to Emit (PE) used for permit requirements determination (i.e. > 2 lb PM₁₀/day), and for annual PE and Quarterly Net Emissions Change tracking (PAS database).

Uncontrolled PM₁₀ Potential to Emit from the unconfined abrasive blasting operation is calculated as follows:

$$PE_{Uncontrolled} = (\text{Abrasive Flow Rate lb/hr}) \times (\text{operation schedule, hr/day}) \times (EF_{Uncontrolled})$$

$$PE_{Uncontrolled} = ([xx] \text{ lb-abrasive used/hr}) \times ([xx] \text{ hr/day}) \times ([xx] \text{ lb-PM}_{10}/\text{lb-abrasive used})$$

$$PE_{Uncontrolled} = [xx] \text{ lb-PM}_{10}/\text{day} > 2 \text{ lb/day}$$

If the emissions from the unit do not exceed 2 lb-PM₁₀/day then stop the evaluation here, delete the rest of following sections of the EE, and prepare an exemption letter using templates posted on AirNet. Otherwise please proceed with the rest of the EE.

Since uncontrolled PM₁₀ Potential to Emit exceeds 2 lb-PM₁₀/day, a permit is required.

$$PE_{Uncontrolled} = [xx] \text{ lb-PM}_{10}/\text{day} \times [xx] \text{ day/year} = [xx] \text{ lb-PM}_{10}/\text{year}$$

$$PE_{\text{Uncontrolled}} = ([xx] \text{ lb-PM}_{10}/\text{year}) / (4 \text{ qtr}/\text{year}) = [xx] \text{ lb-PM}_{10}/\text{qtr}$$

Since this operation is not served by a Particulate Matter control device, there is no controlled PM₁₀ Potential to Emit.

VIII. COMPLIANCE

District Rule 2201 - New and Modified Stationary Source Review

Pursuant to the California Health & Safety Code § 41900 thru § 41905, abrasive blasting operations are exempt from the requirements of District Rule 2201.

District Rule 4102 Nuisance

District Rule 4102 Section 4.0 prohibits of air contaminants, which could cause injury, detriment, nuisance or annoyance to the public.

CH&SC 41700 - California Health and Safety Code

{Note: Depending on the item's being blasted and the operation schedule of the abrasive blasting operation (continuous, temporary, etc) an HRA may not be required. An operation that blasts the same item daily will probably need a HRA. While an operation that that blast a variety of items few hours a month will most likely not need a HRA. See a Tech Specialist for proper designation.}

The District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, 3/2/01) requires that a Risk Management Review (RMR) is performed for any increase in hourly or annual emissions of Hazardous Air Pollutants (HAPs). HAPs are limited to substances included on the list in CH&SC 44321 and that have an OEHHA approved health risk value.

{If HRA is not required, please use the following, otherwise delete}

Per CH&SC Section 41904, an RMR is not required for this abrasive blasting operation and no further discussion is required.

{If HRA is required, please use the following, otherwise delete the rest of this section}

This project results in increases in emissions of HAPs.

The risk associated with emissions increase for this project was reviewed by performing a prioritization in accordance with the requirements of the CAPCOA prioritization guidelines. The resulting prioritization score, acute hazard index, chronic hazard index, and cancer risk from this project is shown below.

Health Risk Assessment Summary	
Prioritization Score	[xx] at [xx] meters
Cancer Risk	xxx
Acute Hazard Index	xxx
Chronic Hazard Index	xxx
T-BACT Required?	Yes/No
Project Approved?	Yes/No

{Use one of the following paragraphs as applicable, and delete the others}

{Prioritization Score \leq to 1.0 (for the project and facility)}

Pursuant to the District Risk Management Policy for New and Modified Sources, since the prioritization score is equal to or less than 1.0, a screening Health Risk Assessment (HRA) is not required.

The project is approved for permitting without consideration of Toxic Best Available Control Technology (T-BACT).

In accordance with District policy, no further analysis is required, and compliance with District Rule 4102 requirements is expected.

A permit condition will be listed as follows:

- {52} The blasting operations shall be carried out in a manner to prevent any nuisances. [District Rule 4102]

See Appendix II: Health Risk Assessment Summary

OR

{Prioritization Score $>$ to 1.0 and Cancer Risk \leq to 1.0 per million (acute and chronic indices)}

Pursuant to the District Risk Management Policy for New and Modified Sources, a Health Risk Assessment (HRA) is required for projects with a prioritization score greater than 1.0. Since the prioritization score of the sum of all projects subject to District’s Risk Management Review Policy is greater than one, a HRA is requested.

District policy APR 1905 specifies that the increase in emissions associated with a proposed new source or modification project not pose a significant health risk. A cancer risk greater than 1.0 per million is considered to pose a significant risk.

Since the HRA indicates that risk is below District acute, chronic, and cancer risk thresholds, Toxic Best Available Control Technology (T-BACT) is not required for this project.

In accordance with District policy, no further analysis is required. As long as the unit is properly maintained and operated, it should not be a public nuisance. Therefore compliance with District Rule 4102 requirements is expected.

A permit condition will be listed as follows:

- {52} The blasting operations shall be carried out in a manner to prevent any nuisances. [District Rule 4102]

See Appendix II: Health Risk Assessment Summary

OR

{Prioritization Score > to 1.0 and Cancer Risk > to 1.0 per million (acute and chronic indices)}

Pursuant to the District Risk Management Policy for New and Modified Sources, a Health Risk Assessment (HRA) is required for projects with a prioritization score greater than one. Since the prioritization score of the sum of all projects subject to District's Risk Management Review Policy is greater than one, a HRA is requested.

District policy APR 1905 specifies that the increase in emissions associated with a proposed new source or modification project not pose a significant health risk. A cancer risk greater than 1.0 per million is considered to pose a significant risk.

For projects where the increase in cancer risk is greater than 1.0 per million, Toxic Best Available Control Technology (T-BACT) is required.

Based on the HRA results, T-BACT is required for this project.

The applicant has proposed T-BACT, therefore, compliance with District Risk Management Policy is expected.

{Note: If T-BACT is not proposed, the project cannot be approved}

The following permit conditions are required to ensure compliance with the assumptions made for the risk management review:

- {52} The blasting operations shall be carried out in a manner to prevent any nuisances. [District Rule 4102]
- {If any, incorporate permit condition required by the HRA}

In accordance with District policy, no further analysis is required. As long as the unit is properly maintained and operated it should not be a public nuisance. Therefore compliance with District Rule 4102 requirements is expected.

See Appendix II: Health Risk Assessment Summary

{option, if applicable use the following statement, otherwise delete}

The facility has proposed to limit the operation of this abrasive blasting unit. This limitation was used to calculate the daily and annual PE. Since the Health Risk

Assessment was based on the proposed operation schedule, a permit condition will be listed on permit as follows:

- Operation schedule of this abrasive blasting unit shall not exceed either of the following limits: [xx] hr/day or [xx] day/year. [District Rule 4102]

17 CCR, Subchapter 6, § 92000 thru § 92540

The Authority to Construct and Permit to Operate will contain sufficient permit conditions to ensure compliance with all of the performance requirements of the sections of the California Code of Regulations mentioned above and discussed as follows.

Visible Emissions (§ 92200 CCR)

- a) Visible emissions from the abrasive blasting operation shall be less than 40% opacity when conducted outside a permanent building.
- b) Visible emissions from the abrasive blasting operation shall be less than 20% opacity when conducted within a permanent building.

A permit condition will be listed as follows:

- {1482} Unconfined abrasive blasting operations shall not discharge air contaminants into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark or darker than Ringelmann 2 or equivalent to 40% opacity. [92200 CCR]

Nuisance Prohibition (§ 92210 CCR)

Compliance with the statewide regulations does not exempt any person from complying with Section 41700 of the Health and Safety Code, nor from complying with any state statutory common law nuisance prohibition.

Performance Standards (§ 92500 CCR)

- a) All abrasive blasting operations must be conducted within a permanent building except when one or more of the following conditions apply:
 - (i) Steel or iron shot/grit is used exclusively.
 - (ii) The item to be blasted exceeds 8 feet in any dimension.
 - (iii) The surface being blasted is situated at its permanent location or no further away from its permanent location than is necessary to allow the surface to be blasted.
- b) Abrasive blasting operations not conducted within a permanent building must use one or more of the following exclusively:
 - (i) Wet abrasive blasting.
 - (ii) Hydroblasting.
 - (iii) Vacuum blasting.

- (iv) Abrasives certified by CARB for permissible dry outdoor blasting.
- c) Abrasive blasting of stucco and concrete shall be performed by wet blasting, hydroblasting, or vacuum blasting with the following exceptions (§ 92520 CCR):
 - Dry blasting with a certified abrasive may be used for:
 - (i) Window and door returns and frames.
 - (ii) Eaves, overhangs, and ceilings.
 - (iii) Sweep abrasive blasting except for stucco surfaces.
 - (iv) Completely shrouded structures or blast areas that effectively control emissions.
 - (v) Abrasive cleaning operations, other than aggregate exposure or paint removal related to new concrete construction or repair activity, if such operations are performed onsite.

Permit conditions will be listed as follows:

- {1475} All abrasive blasting shall be conducted in accordance with California Code of Regulations Title 17, Subchapter 6, Sections 92000 through 92540. [92000 through 92540 CCR]
- {1483} A used certified abrasive shall not be considered certified for reuse unless the abrasive conforms to its original cut-point fineness. [92530 CCR]
- {3259} Except as otherwise provided in this permit, abrasive blasting shall be conducted within a permanent building unless steel or iron shot/grit is used. [92500 CCR]
- {1991} Abrasive blasting of items exceeding 8 feet in any dimension, or of a surface situated at its permanent location, or no further away from its permanent location than is necessary to allow the surface to be blasted, may be performed outside a permanent building only if one of the following is used: steel or iron shot/grit; abrasives certified by CARB for permissible dry outdoor blasting; wet abrasive blasting, hydroblasting; or vacuum blasting. [92500 CCR]

California Health & Safety Code 42301.6 (School Notice)

Reference project location and its proximity to a school and state whether or not school notice is required for this project.

Example (a): (For a Non-School Notice project - > 1,000 feet.)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

Example (b): (For a Non-School Notice project – no increase in emissions)

The District has verified that this site is located within 1,000 feet of a school. However, pursuant to California Health and Safety Code 42301.6, since this project will not result in an increase in emissions, a school notice is not required.

Example (c): (For a School Notice project.)

The District has verified that this site is located within 1,000 feet of the following school:

School Name: [Name]
Address: [Address]

Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is required.

Prior to the issuance of the ATC for this equipment, notices will be provided to the parents/guardians of all students of the affected school, and will be sent to all residents within 1,000 ft of the site.

[If there is no school w/in ¼ mile of the emissions increase, include the following discussion, otherwise delete]:

The District has verified that there are no additional schools within ¼ mile of the emission source.

[If there is a school w/in ¼ mile of the emissions increase, include the following discussion, otherwise delete]:

Since a school notice has been triggered (due to the above-listed school within 1,000 of the emission source), notices will also be provided to the parents/guardians of all students from all school sites within ¼ mile of the emission source. The following schools(s) are within ¼ mile of the emission source:

School Name: [Name]
Address: [Address]
(add additional schools if necessary)

(Note: Refer to FYI - 71 for guidance on how to process a School Notice project.)

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001.

The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential,

significant environmental effects of proposed activities.

- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project qualifies for ministerial approval under the District's Guideline for Expedited Application Review (GEAR). Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit are based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

As described above, the project requires only ministerial approval, and is exempt from the provisions of CEQA. As such, an Indemnification Agreement or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. RECOMMENDATIONS

Compliance with all applicable prohibitory rules and regulations is expected. Issue Authority to Construct X-XXXX-X-X subject to the permit conditions on the attached draft Authority to Construct.

See Appendix II: Authority to Construct ATC [xx]

X. BILLING INFORMATION

Permit Number	Fee Schedule	Fee Description
X-XXXX-X-X	3020-01-xx	[xx] hp

APPENDICES

Appendix I: Health Risk Assessment Summary

Appendix II: Authority to Construct (ATC)

Appendix III: Emissions Profile.

PERMIT CONDITIONS (PAS)

Unconfined Abrasive Blasting Operation (Located Outside a Building Without Cabinet)

{4627} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 4102]

{52} The blasting operations shall be carried out in a manner to prevent any nuisances. [District Rule 4102]

{1475} All abrasive blasting shall be conducted in accordance with California Code of Regulations Title 17, Subchapter 6, Sections 92000 through 92540. [92000 through 92540 CCR]

{1483} A used certified abrasive shall not be considered certified for reuse unless the abrasive conforms to its original cut-point fineness. [92530 CCR]

{1482} Unconfined abrasive blasting operations shall not discharge air contaminants into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark or darker than Ringelmann 2 or equivalent to 40% opacity. [92200 CCR]

{3259} Except as otherwise provided in this permit, abrasive blasting shall be conducted within a permanent building unless steel or iron shot/grit is used. [92500 CCR]

{1991} Abrasive blasting of items exceeding 8 feet in any dimension, or of a surface situated at its permanent location, or no further away from its permanent location than is necessary to allow the surface to be blasted, may be performed outside a permanent building only if one of the following is used: steel or iron shot/grit; abrasives certified by CARB for permissible dry outdoor blasting; wet abrasive blasting, hydroblasting; or vacuum blasting. [92500 CCR]

APPENDIX I

HEALTH RISK ASSESSMENT SUMMARY

APPENDIX II

DRAFT AUTHORITY TO CONSTRUCT

ATC #

APPENDIX III

EMISSIONS PROFILE