BOARD MEETING DATE: March 3, 2017 AGENDA NO. 36

PROPOSAL: Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities

SYNOPSIS: Proposed Rule 1430 will reduce particulate matter and toxic emissions and help to reduce odors from metal grinding and cutting operations at forging facilities. Metal grinding and cutting operations are currently exempt from SCAQMD permits. Based on monitoring, sampling, and site visits, metal grinding at forging facilities can be a significant source of metal particulate emissions, some of which are also toxic air contaminants. The proposed rule will prohibit forging facilities from conducting grinding and cutting operations in the open air and includes requirements to vent metal grinding and cutting operations to emission control devices, to meet a specified emission standard for the emission control devices, conduct metal grinding and cutting operations in a building enclosure to reduce fugitive emissions, and implement a series of housekeeping measures to further minimize fugitive emissions.

COMMITTEE: Stationary Source, January 20, 2017, Reviewed

RECOMMENDED ACTIONS:
Adopt the attached resolution:
1. Certifying the Final Environmental Assessment for Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities; and
2. Adopting Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities.

Wayne Nastri
Executive Officer

PF: SN:EK:DG

Background
Metal grinding operations at metal forging facilities are unique, based on the magnitude and power of the grinding equipment, combined with the intensity of the grinding operations. Metal grinding and cutting operations are currently an unregulated source. As such, some metal forging facilities conduct metal grinding and cutting operations in the open air with no pollution controls, while other facilities have pollution controls, however, there are no requirements to ensure these controls are properly operated and maintained. Air monitoring and sampling has shown metal particulate, some of which are toxic air contaminants such as nickel and cadmium, are associated with metal grinding and cutting operations.

Metal grinding operations at metal forging facilities was brought to SCAQMD's attention by community representatives in the city of Paramount through a series of odor complaints that began in 2012. Through air quality analyses and investigation, the SCAQMD staff identified Carlton Forge Works' metal grinding operation as the primary source of the odor complaints. Carlton Forge Works is a metal forging facility that manufactures large seamless rings for the aerospace industry. Based on air monitoring near Carlton Forge Works, nickel and hexavalent chromium were the metals of greatest concern based on the levels measured and their toxicity.

Although Carlton Forge Works was conducting their metal grinding operation within a building and had pollution controls, point source controls were not operated properly and fugitive emissions were escaping from large vents and bay doors in the building. As a result, initial nickel levels averaged 90 ng/m^3 with levels as high as 300 ng/m^3. As Carlton Forge Works implemented a series of voluntary measures to their point source controls and building enclosure to reduce emissions from their grinding operations between 2013 through 2015, average nickel levels decreased to 16 ng/m^3. During the rulemaking process, SCAQMD staff has found similar, and in most cases lesser, pollution controls for metal grinding operations at other forging facilities as compared to Carlton Forge Works prior to implementing voluntary measures. Given that all alloys contain some level of toxic metals, it is expected that similar and possibly higher PM and toxic metal levels are emitted from metal grinding operations at other forging facilities as compared to Carlton Forge Works.

Hexavalent chromium levels near Carlton Forge Works were generally not affected by implementation of the voluntary measures, indicating that the source of hexavalent chromium is likely from a source other than metal grinding, and possibly from the hot forging process or a source unrelated to Carlton Forge Works. The levels of hexavalent chromium near Carlton Forge Works are on average approximately 0.4 ng/m^3, with some days as high as 1 ng/m^3, which is substantially lower than levels found in October 2016 in other industrial areas in the city of Paramount that were over 20 ng/m^3. The SCAQMD staff is continuing to investigate the source(s) of hexavalent chromium in the

industrial areas in the City of Paramount and has taken, and will continue to take, the appropriate regulatory or other actions to reduce these emissions.

Proposal

The SCAQMD staff has identified 22 metal forging facilities that conduct metal grinding or cutting operations that are subject to Proposed Rule 1430. Proposed Rule 1430 will prohibit grinding in the open air beginning date of adoption. At full implementation, all facilities will be required to conduct their operations within a total enclosure, and those facilities that are within 500 feet of a sensitive receptor or 1,000 feet of a school or an early education center will be required to operate the total enclosure under negative air that is vented to air pollution controls.

Proposed Rule 1430 establishes a point source emission standard of 0.002 grains per dry standard cubic feet, and requires facilities to install High Efficiency Particulate Arrestors (HEPA). Compliance with the point source emission standard is demonstrated through a PM source test. The proposed rule also requires a multi-metals and hexavalent chromium source test every four years, with specific exclusions for facilities with low total chromium levels. To ensure continuous compliance, the proposed rule requires installation of a bag leak detection system, a continuous data logger to measure the pressure across the HEPA filter, and smoke tests to verify air flow for the pollution controls. To further ensure compliance with point source requirements, the proposed rule requires additional source testing requirements if the pressure across the HEPA continuously falls out of range for prolonged periods of time.

Proposed Rule 1430 establishes a series of housekeeping requirements and recordkeeping requirements. The proposed rule also includes odor contingency measures that a facility must implement if a facility receives four or more confirmed odor complaints that are related to metal grinding or metal cutting operations. The proposed rule will also require each facility to place signs that have a facility contact and the SCAQMD's 1-800-CUT-SMOG to report air quality issues.

Public Process

Proposed Rule 1430 was developed with input from a stakeholder working group that included representatives from industry, consultants, environmental groups, community groups, and public agencies. Six working group meetings were held on October 7, 2015, September 14, 2016, October 26, 2016, December 1, 2016, January 11, 2017, and February 6, 2017. At the request of community representatives, the September and December working group meetings were held in evening in the city of Paramount. A Public Workshop was held on January 19, 2017 to present the proposed rule and receive public comment, and a Public Consultation meeting was held on January 25, 2017 in the city of Paramount.

Key Issue
Through the rulemaking process, staff has been working with stakeholders and has resolved a number of issues. One remaining key issue is regarding the cost of air pollution controls. One metal forging facilities has commented that the cost to install air pollution controls necessary to comply with the proposed rule are burdensome and could potentially result in the facility closing. Based on a site visit to the facility during the rulemaking process, the facility conducts grinding outside of a building enclosure with no air pollution controls. The estimated capital cost for the facility to comply with PR 1430 is approximately $340,000. These costs are disproportionately higher than other facilities with similar grinding operations that are subject to PR 1430, because the facility currently lacks a building enclosure and air pollution controls for their metal grinding operations. As a result, the estimated compliance cost for the facility reflects the cost to construct a total enclosure, install new air pollution control equipment, and purchase proper housekeeping equipment.

AQMP and Legal Mandates
Pursuant to Health & Safety Code Section 40460 (a), the SCAQMD is required to adopt an Air Quality Management Plan (AQMP) demonstrating compliance with all federal regulations and standards. The SCAQMD is required to adopt rules and regulations that carry out the objectives of the AQMP. PR 1430 is not a control measure in the Draft 2016 AQMP, but is needed to reduce the generation of fugitive metal particulates from metal grinding or metal cutting emissions from metal forging facilities.

California Environmental Quality Act
Pursuant to California Environmental Quality Act (CEQA) Guidelines §15252 and §15070 and SCAQMD Rule 110, the SCAQMD has prepared an Environmental Assessment (EA) for PR 1430. The environmental analysis in the Draft EA concluded that PR 1430 would not generate any significant adverse environmental impacts and therefore, no alternatives or mitigation measures are required. The Draft EA was released for a 30-day public review and comment period from January 10, 2017 to February 10, 2017. Three comment letters were received from the public relative to the Draft EA and responses to the comments have been prepared. The comment letters and the individual responses to the comments have been included in Appendix E of the Final EA. Subsequent to release of the Draft EA, modifications were made to the proposed project. SCAQMD staff has reviewed the modifications to the proposed project and concluded that none of the modifications constitute significant new information or a substantial increase in the severity of an environmental impact, nor provide new information of substantial importance relative to the Draft EA. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5 and §15088.5. Therefore, the Draft EA is now a Final EA and is included as an attachment to the Board package. The SCAQMD Board must review the adequacy of the Final EA, including responses to comments, prior to certification of the Final EA and adoption of PR 1430.

Socioeconomic Assessment
The main requirements of the proposed rule that have cost impacts for affected facilities would include the installation of baghouses with HEPA filters (point-source controls on existing and new enclosures) and the upgrading of an existing building to a total enclosure or construction of a new total enclosure. Some facilities will be required to add negative air vented to pollution controls to the total enclosure depending on a facility's proximity to sensitive receptors, schools and early education schools. The annual compliance costs of PR 1430 are estimated to range from $6.0 million to $6.2 million, depending on the real interest assumed (1%-4%). Press Forge, a metal forging facility in Paramount, would bear the largest share of annual compliance costs (14% or approximately $875 K annually based on a 4% real interest) due to the installation of a total enclosure with negative air that is necessary based on proximity to a sensitive receptor, school and early education school.

The proposed rule is expected to result in approximately 46 jobs foregone annually between 2017 and 2035 when a 4-percent interest rate is assumed (approximately 44 jobs with a 1-percent real interest rate). The projected job impacts represent about 0.001 percent of the total employment in the four-county region. The socioeconomic assessment was made available to the public at least 30 days prior the Public Hearing and is included as part of the Public Hearing Package.

Implementation and Resource Impact
Existing SCAQMD resources will be used to implement Proposed Rule 1430.

Attachments
A. Summary of Proposal
B. Key Issues and Responses
C. Rule Development Process
D. Key Contacts List
E. Resolution
F. Proposed Rule 1430 Rule Language
G. Proposed Rule 1430 Staff Report
H. Final Socioeconomic Assessment
I. Final Environmental Assessment
J. Board Meeting Presentation

ATTACHMENT A

SUMMARY OF PROPOSAL

Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities
<u>Prohibition on Outdoor Grinding</u> ▪ Effective date of rule adoption, metal forging facilities are prohibited from conducting any metal grinding or metal cutting operations in the open <u>Total Enclosures</u> ▪ Conduct metal grinding or metal cutting in a total enclosure that minimizes the release of fugitive dust emissions from passage, doorways, and bay doors: o No later than 12 months if constructing a new building for total enclosure o No later than 6 months if modifying an existing structure to be a total enclosure o Conduct additional, enhanced housekeeping measures until total enclosure is completed ▪ Monthly inspection of total enclosures and conduct repairs within 72 hours; immediate stoppage of work if total enclosure results in fugitive dust emissions ▪ Total enclosure with negative air required for facilities located: o Within 500 feet of a sensitive receptor or 1,000 feet of a school o Install no later than 6 months after Permit to Operate issued <u>Interim Requirements</u> ▪ Facilities that are currently grinding in the open must conduct metal grinding operations within a temporary enclosure or a building ▪ Until total enclosures are constructed, additional housekeeping provisions are required <u>Metal Grinding and Cutting Emission Requirements</u> ▪ Vent emissions to an emission control device that meets a PM outlet concentration limit of 0.002 grains/dry standard cubic feet ▪ Final stage of control for emission control devices shall be fitted with filter media rated at a minimum 99.97% control efficiency for 0.3 micron particles (HEPA) o Alternatively meet 98% if facility demonstrates lower volume of metal grinding and toxic emissions less than Rule 1401 screening levels ▪ Emission control devices must meet design and operation standards in order to ensure proper ventilation for capture of emissions ▪ Conduct metal grinding and metal cutting operations in effective zones of collection <u>Housekeeping Requirements</u> ▪ Semi-annual cleaning of roof tops of total enclosures ▪ Monthly wet cleaning or HEPA vacuuming of floors of a building or total enclosures areas where metal grinding or metal cutting operations occur ▪ Daily wet cleaning or HEPA vacuuming within 20 feet of metal grinding workstations, entrances/exits of enclosures, and emission control devices ▪ Storage of all materials capable of generating metal fugitive dust in sealed containers

unless stored in total enclosure
- Prohibition of compressed air cleaning or dry sweeping within 30 feet of metal grinding and cutting operations unless conducted under an emission control device

Source Testing
- Conduct PM emission source test once every 12 months
  - Once every 24 months if most recent source test results show less than 50% of PM emission standard
- Conduct multiple metals and hexavalent chromium source test once every 48 months
  - Can forego hexavalent chromium source testing if all baghouse catch samples at change out show a total chromium concentration of < 1% by weight
- Additional PM, multi-metals, and possibly hexavalent chromium source testing if HEPA monitoring requirements are triggered (See Monitoring for HEPA filter)

Monitoring
- Maintain a Bag Leak Detection System pursuant to SCAQMD Rule 1155
- Measure by static duct pressure of hood once per operating day
- Conduct a smoke test once every 3 months
- Continuously monitor and log pressure changes across the HEPA filter
  - Must conduct additional source tests within 60 days if monitored pressure exceeds acceptable ranges for a 4-hour period on three or more separate days over any consecutive 60 days, or any consecutive 24-hour period

Recordkeeping
- Monthly records of metal waste collected by baghouse and housekeeping activities
- Maintain records of when bags/filters are replaced
- Maintain records of all total enclosure inspections, smoke tests, emission control device inspection and maintenance, housekeeping activities, maintenance and repair activities
- Maintain log of calls received regarding odors or air quality related issues

Signage
- Install facility sign providing contact information for SCAQMD and the facility for the reporting of air quality issues

Odor Contingency Measures
- Implement odor reducing measures after receiving 4 confirmed odor complaints within a consecutive 6-month period:
  - Operational or process changes to reduce odors (within 60 days)
  - Enhancements to a temporary enclosure, building, or total enclosure (within 90 days)
  - Other measures or modifications, approved by the Executive Officer, to reduce or minimize odors (schedule approved by the Executive Officer)

Rule 219 Exemption
- Metal grinding or metal cutting operations and associated emission control devices shall no longer be exempt from requirements of a written permit

ATTACHMENT B
KEY ISSUES AND RESPONSES

Proposed Rule (PR) 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities
Air Pollution Controls Required by PR 1430: A metal forging facility subject to PR 1430 has commented that the cost to install air pollution controls to comply with PR 1430 would be burdensome and potentially result in the facility closing. • SCAQMD staff has conducted a site visit at the facility and met with the facility operator to discuss the provisions of PR 1430 and the need for air pollution controls on metal grinding operations at forging facilities. • The facility is conducting a swing grinding and hand grinding operation outside of a building enclosure with no air pollution controls • SCAQMD staff estimated that the capital cost for the facility to comply with PR 1430 is approximately $340,000. The estimated capital cost for the facility to comply with PR 1430 includes, construction of an enclosure, installation of an air pollution control device, and the purchase of proper housekeeping equipment. • The estimated capital cost for the facility is disproportionately higher than other facilities with similar size metal grinding operations, because, unlike most metal forging facilities the facility's grinding operation is both completely uncontrolled and lacks a building enclosure. If the facility had an enclosure the estimated capital cost would be substantially reduced to approximately $180,000 • Staff's estimated capital cost assumes the facility will construct a new structure. The SCAQMD staff clarified to the facility that it can use an existing structure and upgrade it to meet the total enclosure requirements which can substantially reduce the cost to comply with PR 1430.

ATTACHMENT C

RULE DEVELOPMENT PROCESS

Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities

Thirty-seven (37) months spent in rule development.
One (1) Public Workshop.
Six (6) Working Group Meetings.

***meeting held in Paramount**

ATTACHMENT D
KEY CONTACTS LIST

Advanced Environmental Controls
Alcoa Fastening Systems & Rings
Almega Environmental
Associates Environmental
Beyond by Aerus
The Boeing Company
California Amforge Corporation
California Communities Against Toxics
California Metals Coalition
California Safe Schools
Carlton Forge Works
City of Paramount
Dameron Alloy Foundries
Dodge Oil Company
Environmental Resources Management
Houghton International Incorporated
Independent Lubricant Manufacturers Association
Julia Clabault (Paramount Resident)
KP Public Affairs
Laurie Guillen (Paramount Resident)
Lisa Lappin (Teachers Association of Paramount)
Mattco Forge Inc
MC^2 Environmental Engineering Services
Michele Lewis (Paramount Unified School District)
Office of Senator Ricardo Lara
Press Forge Co.
Ramboll Environ
Sierra Alloys
Solutions 4 Blast
Teachers Association of Paramount
U.S. EPA Region IX
Valley Forge Incorporated
Weber Metals

ATTACHMENT E

RESOLUTION NO. 17-_____

A Resolution of the Governing Board of the South Coast Air Quality Management District (SCAQMD) certifying the Final Environmental Assessment (EA) for Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Grinding Forging Facilities.

A Resolution of the SCAQMD Governing Board Adopting Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Grinding Forging Facilities.

WHEREAS, the SCAQMD Governing Board finds and determines that Proposed Rule 1430 is considered a "project" pursuant to the California Environmental Quality Act (CEQA), and that the proposed project would not have a significant adverse effect on the environment; and

WHEREAS, the SCAQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and has conducted a CEQA review pursuant to such program (SCAQMD Rule 110); and

WHEREAS, the SCAQMD staff has prepared a Draft Environmental Assessment (EA) pursuant to its certified regulatory program and CEQA Guidelines Section 15252, setting forth the potential environmental consequences of Proposed Rule 1430; and

WHEREAS, the Draft EA was circulated for a 30-day public review from January 11, 2017 to February 10, 2017; and

WHEREAS, the Draft EA has been revised to include comments received on the Draft EA and the responses, so that it is now a Final EA; and

WHEREAS, Findings pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15091 and a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093 were not prepared because the analysis of the proposed project shows that Proposed Rule 1430 would not have a significant adverse effect on the environment, and thus, are not required; and

WHEREAS, it is necessary that the adequacy of the Final EA, including responses to comments received relative to the Draft EA, be determined by the SCAQMD Governing Board prior to its certification; and

WHEREAS, the Board package includes the Final EA and other supporting documentation, and this information was presented to the SCAQMD Governing Board, and that the Board has reviewed and considered the entirety of this information before approving the staff recommendations; and

WHEREAS, the SCAQMD Governing Board voting to adopt Proposed Rule 1430 has reviewed and considered the information contained in the Final EA and other supporting documentation, including responses to comments and has determined that the document has been completed in compliance with CEQA; and

WHEREAS, pursuant to CEQA Guidelines Section 15252 (a)(2)(B), since no significant adverse impacts were identified, no alternatives or mitigation measures are required and thus, a Mitigation Monitoring and Reporting Plan pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097, has not been prepared; and

WHEREAS, the SCAQMD Governing Board voting on Proposed Rule 1430, has reviewed and considered the Final EA prior to its certification; and

WHEREAS, the Final EA reflects the independent judgment of the SCAQMD; and

WHEREAS, the SCAQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures, that the modifications which have been made to Proposed Rule 1430 since the notice of public hearing was published do not significantly change the meaning of the proposed rule within the meaning of Health and Safety Code Section 40726 and would not constitute significant new information requiring recirculation of the Draft EA pursuant to CEQA Guidelines Section 15073.5 and Section 15088.5; and

WHEREAS, Proposed Rule 1430 is not a control measure in the 2012 Air Quality Management Plan (AQMP) and was not ranked by cost-effectiveness relative to other AQMP control measures in the 2012 AQMP, and furthermore, pursuant to Health and Safety Code Section 40910, cost-effectiveness in terms of dollars per ton of pollutant reduced is only applicable to rules regulating ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide and does not apply to toxic air contaminants; and

WHEREAS, Proposed Rule 1430 will not be submitted for inclusion into the State Implementation Plan; and

WHEREAS, the SCAQMD staff conducted a public workshop regarding Proposed Rule 1430 on January 19, 2017 and a public consultation meeting regarding Proposed Rule 1430 on January 25, 2017; and

WHEREAS, Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1430 is needed to further protect public health by reducing metal particulate matter emissions, some of which are toxic, and odors from dry metal grinding and cutting operations at metal forging facilities by prohibiting outdoor grinding and establishing requirements for conducting metal grinding and metal cutting within total enclosures, venting emissions to appropriate pollution control equipment, and conducting housekeeping practices; and

WHEREAS, the SCAQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from Sections 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, and 41700 of the Health and Safety Code; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1430, as proposed to be adopted, is written and displayed so that the meaning can be easily understood by persons directly affected by it; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1430, as proposed to be adopted, is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1430, as proposed to be adopted, does not impose the same requirements as any existing state or federal regulations, and the proposed project is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1430 will alleviate a problem by establishing control requirements

to address particulate matter emissions, which contain some level of toxic metals, from metal grinding and metal cutting operations conducted at metal forging facilities, which is currently an unregulated source and exempt from SCAQMD permitting, and for which most of the affected facilities either have insufficient or no air pollution controls; and

WHEREAS, the SCAQMD Governing Board, in adopting this regulation, references the following statutes which the SCAQMD hereby implements, interprets or makes specific: the provisions of the Health and Safety Code Section 41700 (nuisance) and Federal Clean Air Act Section 112 (Hazardous Air Pollutants) and Section 116 (Retention of State Authority); and

WHEREAS, Health and Safety Code Section 40727.2 requires the SCAQMD to prepare a written analysis of existing federal air pollution control requirements applicable to the same source type being regulated whenever it adopts, or amends a rule, and that the SCAQMD's comparative analysis of Proposed Rule 1430 is included in the staff report; and

WHEREAS, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment of Proposed Rule 1430 is consistent with the March 17, 1989 and October 14, 1994 Governing Board Socioeconomic Resolutions for rule adoption; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1430 will result in increased costs to metal forging facilities, yet are considered to be reasonable, with a total annualized cost as specified in the Socioeconomic Impact Assessment; and

WHEREAS, the SCAQMD Board has actively considered the Socioeconomic Impact Assessment and has made a good faith effort to minimize such impacts; and

WHEREAS, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment is consistent with the provisions of the Health and Safety Code Sections 40440.8, 40728.5, 40920.6; and

WHEREAS, the SCAQMD Governing Board specifies the Director overseeing the rule development for Proposed Rule 1430 as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed project is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

WHEREAS, a public hearing has been properly noticed in accordance with all provisions of Health and Safety Code Section 40725; and

WHEREAS, the SCAQMD Governing Board has held a public hearing in accordance with all provisions of law; and

WHEREAS, the SCAQMD Governing Board has determined that for metal grinding and cutting operations at metal forging facilities, Proposed Rule 1430 will reduce point source and fugitive metal particulate, some of which are toxic air contaminants by establishing requirements for total enclosures, emission controls, housekeeping, and a prohibition on outdoor metal grinding and metal cutting operations, in addition to helping to reduce odors by requiring grinding within a total enclosure and requires additional odor reducing measures, as needed, through provisions for odor contingency measures of the proposed rule; and

WHEREAS, the SCAQMD has conducted monitoring near Carlton Forge Works and nickel levels decreased as additional measures to reduce grinding emissions were implemented, however, hexavalent chromium levels increased indicating that the source of the hexavalent chromium is not from their grinding operations; and

NOW, THEREFORE BE IT RESOLVED, that the SCAQMD Governing Board directs staff to continue ongoing investigations to identify the source(s) of hexavalent chromium by conducting additional monitoring near Carlton Forge Works; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby certify the Final EA and other supporting documentation was completed in compliance with CEQA; and finds that the Final EA, including responses to comments, was presented to the Governing Board, whose members reviewed, considered and approved the information therein prior to acting on Proposed Rule 1430; and

BE IT FURTHER RESOLVED, that because no significant adverse environmental impacts were identified as a result of implementing Proposed Rule 1430, Findings pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15091, a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093, and a Mitigation Monitoring and Reporting Plan pursuant to Public Resource Code Section 21081.6 and CEQA Guidelines Section 15097 are not required; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Rule 1430 as set forth in Attachment F and incorporated herein by this reference.

DATE: _____ _____

CLERK OF THE BOARDS

PR 1430
March 3, 2017

PROPOSED RULE 1430 CONTROL OF EMISSIONS FROM METAL GRINDING OPERATIONS AT METAL FORGING FACILITIES

(a) Purpose

The purpose of this rule is to reduce toxic emissions, particulate matter emissions, and odors from metal grinding and metal cutting operations at metal forging facilities.

(b) Applicability

This rule applies to all persons who own or operate a metal forging facility where metal grinding or metal cutting operations are conducted. This rule does not apply to metal grinding or metal cutting conducted under a continuous flood of metal removal fluid, or grinding activities conducted to maintain or repair equipment at the facility.

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

(1) BAG LEAK DETECTION SYSTEM means a system that monitors electrical charge transfer based on triboelectric or electrostatic induction to continuously monitor bag leakage and similar failures by detecting changes in particle mass loading in the exhaust.

(2) BILLET means a semi-finished hot rolled, or forged product. The width of a billet is not more than twice the thickness, and the cross-sectional area is about 36 square inches or above.

(3) BILLET GRINDING means metal grinding using (a) travelling grinder(s) designed for billets, which are metal bars, before and after forging.

(4) BUILDING means a type of enclosure that is a permanent structure, completely enclosed with a floor, four walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with openings to allow ingress and egress for people and vehicles.

(5) CAPTURE VELOCITY means the minimum hood induced air velocity necessary to capture and convey air contaminants into an emission collection system.

(6) CONFIRMED ODOR COMPLAINT means an occurrence of odor relating to metal grinding or metal cutting operations resulting in a complaint by different individuals from different households, with the source of the odor having been

verified by District personnel. An individual may only be counted as one confirmed odor complaint per day.

(7) DUCT SECTION means a length of duct including angles and bends which is contiguous between two or more process devices (e.g., between a furnace and heat exchanger; baghouse and scrubber; scrubber and stack; etc.).

(8) EFFECTIVE ZONE means the region in front of the hood that is adequately controlled by the flow of air into the hood.

(9) EMISSION COLLECTION SYSTEM means any equipment installed for the purpose of directing, taking in, confining, and conveying an air contaminant, and which at minimum conforms to design and operation specifications given in the most current edition of *Industrial Ventilation, Guidelines and Recommended Practices*, published by the American Conference of Governmental Industrial Hygienists, at the time the permit application is deemed complete with the SCAQMD.

(10) EMISSION CONTROL DEVICE means any equipment after the emission collection system for the purposes of collecting and reducing metal-dust emissions from metal grinding and metal cutting operations~~activities~~.

(11) FUGITIVE METAL DUST means any solid particulate matter containing metal that has the potential to become airborne.

(12) HAND GRINDING means metal grinding using a hand tool, including hand powered tools, that prepares, cuts, grinds and polishes or finishes forgings with a disc greater than 1-inch diameter. Examples include angle grinders, internal diameter "I.D." grinders, disc grinders, and side grinders. Hand grinding excludes small part grinding as defined in paragraph (c)(20).

(13) HIGH EFFICIENCY PARTICULATE ARRESTORS (HEPA) means filter(s) rated at 99.97% or more efficient in collecting particle sizes 0.3 microns or greater in size.

(14) MAINTENANCE AND REPAIR ACTIVITY means any of the following activities conducted outside of a total enclosure that generates or has the potential to generate fugitive metal-dust:

(A) maintenance or repair activities on any emission control device that vents metal grinding or metal cutting operations; or

(B) replacement or removal of any duct section used to vent metal grinding or metal cutting operations.

(15) METAL means ferrous (iron-based) metals and alloys and non-ferrous (non-iron-based) metals and alloys. Examples of metals include, but are not limited to, iron,

stainless steel, and their iron-based alloys, stainless steel, aluminum, copper, brass, bronze, gold, silver, zinc, tin, lead, platinum, nickel, chromium, cadmium, manganese, tungsten, and titanium and their non-ferrous alloys.

(16) METAL CUTTING OPERATION means a process used to abrasively cut starting ingot, log, or billet stock to length in preparation for the forging process. This does not include plasma cutting or laser cutting.

(17) METAL FORGING FACILITY means any facility that forms and shapes metals through the use of hammering, pressing, or rolling by heating raw stock, usually in the form of ingots, logs or billets, to its plastic deformation temperature and then shaping to a desired shape and size. Metal grinding, metal cutting, and small part grinding operations related to this process are included.

(18) METAL GRINDING OPERATION means billet grinding, hand grinding, stand grinding, swing grinding, and torch cutting. Metal grinding operation does not include small part grinding as defined in paragraph (c)(20), shot peening, and abrasive blasting. Metal grinding operation also excludes hand grinding that is conducted for the purpose of quality control or quality assurance to remove small imperfections on metal parts after they have been processed in a metal forging facility's primary metal grinding operation.

(19) METAL REMOVAL FLUID means a fluid used at the tool and workpiece interface to facilitate the removal of metal from the part, cool the part and tool, extend the life of the tool, and to flush away metal chips and debris, but does not include minimum quantity lubrication fluids used to coat the tool work piece interface with a thin film of lubricant and minimize heat buildup through friction reduction. Minimum quantity lubrication fluids are applied by pre-coating the tool in the lubricant, or by direct application at the tool work piece interface with a fine mist.

(20) SMALL PART GRINDING means metal grinding using a hand tool, including hand powered tools with a disc greater than 1-inch diameter that is used to prepare, cut, grind and polish or finish forging parts with a total surface area less than 25 square inches. Examples include angle grinders, internal diameter "I.D." grinders, disc grinders, and side grinders.

(21) STAND GRINDING means metal grinding using a stand grinder that is usually single speed and used for small castings and light metal removal.

(22) SWING GRINDING means metal grinding using a swing grinder designed with full lateral movement typically used to prepare medium and large billets.

(23) TEMPORARY ENCLOSURE means a structure comprised of a floor, roof, walls and or partitions on at least three sides or three-quarters of the perimeter that surrounds areas where metal grinding or metal cutting operations are conducted.

(24) TORCH CUTTING means metal grinding using a blowpipe by which metal is preheated with a flame and then oxidized rapidly and removed by a jet of oxygen issuing centrally through the preheating flame.

(25) TOTAL ENCLOSURE means a permanent containment structure, completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with limited openings to allow access and egress for people and vehicles, that is free of breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust.

(d) Total Enclosures

(1) An owner or operator of a metal forging facility is prohibited from conducting ~~any~~all metal grinding or metal cutting operations, or small part grinding outside of a temporary enclosure, building, or total enclosure.

(2) An owner or operator of a metal forging facility shall conduct all metal grinding and metal cutting operations in a total enclosure that minimizes the release of fugitive metal dust emissions from passages, doorways, and bay doors by installing automatic roll-up doors, plastic strip curtains, or vestibules for doors and openings of the total enclosure. Alternative methods to minimize the release of fugitive metal dust from the total enclosure may be used if the owner or operator can demonstrate to the Executive Officer (an) equivalent or more effective method(s) to minimize cross-draft conditions. The total enclosure shall be completed:

(A) No later than [6 months after Date of Rule Adoption] if the owner or operator is conducting metal grinding or metal cutting operations in a building, existing as of [Date of Rule Adoption], that will be modified to a total enclosure to meet the provisions in paragraph (d)(2); or

(B) No later than 12 months after [Date of Rule Adoption], if a new building is constructed to meet the provisions of paragraph (d)(2), provided the owner or operator provides written notice to the Executive Officer within 60 days after [Date of Rule Adoption] that a new total enclosure will be constructed.

(3) Until the total enclosure requirements of paragraph (d)(2) are met, the owner or operator of a metal forging facility shall:

(A) Conduct metal grinding and metal cutting operations in a temporary enclosure or a building.

(B) In addition to housekeeping provisions specified under subdivision (f), conduct the following cleanings by wet cleaning or HEPA vacuum after or at the end of each operating shift:

(i) Floors within 30 feet of a work station or workstations for metal grinding or metal cutting;

(ii) Floors within 40 feet of any entrance/exit point for the temporary enclosure or building; and

(iii) Floors of temporary enclosure or building areas where metal grinding or metal cutting operations occur.

(4) All enclosure types shall be designed in a manner that does not conflict with requirements set forth by the federal Occupational Safety and Health Administration (OSHA) or the California Division of Occupational Safety and Health (CAL-OSHA) regarding worker safety.

(5) The owner or operator of a metal forging facility shall inspect any total enclosure at least once a calendar month for breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust.

(6) The owner or operator of a metal forging facility shall immediately stop metal grinding and metal cutting operations if inspection of a total enclosure where these operations are conducted reveals a break, crack, gap or deterioration which results in fugitive metal dust. The owner or operator may resume metal grinding and metal cutting operations until the total enclosure is repaired pursuant to paragraph (d)(7), if temporary measures are implemented that ensure no fugitive metal dust results from the break, crack, gap or point of deterioration.

(7) The owner or operator of a metal forging facility shall repair any breaks, cracks, gaps, or deterioration that could or results in fugitive metal dust from any total enclosure within 72 hours of discovery. The Executive Officer may approve a request for an extension beyond the 72-hour limit if the request is submitted before the 72-hour time limit has expired, and the owner or operator can provide information to substantiate that either:

(A) the repair will take longer than 72 hours; or

(B) the equipment, parts or materials needed for the repair cannot be obtained within 72 hours.

(8) Total Enclosures with Negative Air

(A) The owner or operator shall vent the total enclosure for any metal grinding or metal cutting operation to an emission control device that meets the requirements of subdivision (e) no later than 6 months after a Permit to

Construct for the emission control device is issued by the Executive Officer if the property line of the facility is:

(i) Within 500 feet of the property line of any residence including private homes, condominiums, apartments, and living quarters; daycare centers; health care facilities such as hospitals or retirement and nursing homes; long-term care hospitals, hospices, prisons, and dormitories or similar live-in housing; or

(ii) Within 1,000 feet of the property line of any public or private school, including juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including kindergarten and grades 1 through 12, inclusive; and ~~e~~Early Learning and Developmental Programs as defined by the U.S. Department of Education ~~head start schools, head start schools, and preschools~~. This provision does not apply to any private school in which education is primarily conducted in private homes.

(B) The total enclosure referenced in subparagraph (d)(8)(A) shall continuously meet an in-draft velocity of > 200 feet per minute at any opening including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-ups no later than 6 months after a Permit to Construct for the emission control device venting the total enclosure is issued by the Executive Officer. In-draft velocities for each total enclosure shall be determined by placing an anemometer, or an equivalent device approved by the Executive Officer, at the center of the plane of any opening of the total enclosure.

(e) Metal Grinding and Cutting Emission Requirements

(1) The owner or operator of a metal forging facility shall vent emissions from all metal grinding and metal cutting operations to an emission control device no later than 6 months after a Permit to Construct for the emission control device is issued by the Executive Officer. The emission control device shall not exceed a PM outlet concentration of 0.002 grains of particulate matter per dry standard cubic foot as determined by the most recent SCAQMD-approved source test conducted on behalf of the facility or the SCAQMD pursuant to subdivision (h).

(2) The final stage of any emission control device required under paragraph (e)(1) shall be fitted with HEPA filters, or filter media rated by the manufacturer to achieve a minimum of 99.97% control efficiency for 0.3 micron particles, and designed in a manner that does not conflict with requirements or guidelines set forth by the

OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety.

(3) The owner or operator of a metal forging facility may alternatively fit the final stage of any emission control device required under paragraph (e)(1) with filter media rated by the manufacturer to achieve a minimum of 98% control efficiency for 0.3 micron particles if:

(A) the owner or operator does not conduct billet grinding, metal cutting, swing grinding, or torch cutting; and

(B) the owner or operator operates a combination of 10 or fewer hand grinding units or stand grinding stations; and

(C) toxic emissions from the emission control device does not exceed the screening levels identified in Table I – Toxic Air Contaminants in Rule 1401 - New Source Review of Toxic Air Contaminants, or does not result in a risk of over 1 in a million using the most recent SCAQMD Risk Assessment Procedures for Rule 1401.

(4) The owner or operator of a metal forging facility shall operate the emission control device required under paragraph (e)(1) at the minimum hood induced capture velocity specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with the SCAQMD.

(5) No later than [30 days after Date of Rule Adoption], the owner or operator of a metal forging facility shall:

(A) Provide permanent visual indicators or markings at all hand grinding, stand grinding, swing grinding, and torch cutting stations that identify the maximum distance metal grinding may occur from the emission control device to ensure the emission collection system meets the requirements of subdivision (e);

(B) All metal grinding activity shall be in front of the hood face and within the area identified in subparagraph (e)(5)(A); and

(C) The air flow shall not be obstructed between the metal grinding operation and the hood for the emission collection system.

(6) No later than [30 days after Date of Rule Adoption], the owner or operator of a metal forging facility shall remove any weather cap installed on any stack that is a source of metal particulate emissions or install a butterfly valve.

(f) Housekeeping Requirements

Unless otherwise specified, no later than [30 days after Date of Adoption], the owner or operator of a metal forging facility shall implement the following housekeeping practices:

(1) The owner or operator of a metal forging facility that is conducting metal grinding or metal cutting operations shall conduct semi-annual wet cleaning or HEPA vacuuming, no more than 6 calendar months apart, of roof tops for total enclosures that house areas associated with metal grinding or metal cutting operations.

(2) The owner or operator of a metal forging facility that is conducting metal grinding or metal cutting operations or small part grinding, shall conduct daily wet cleaning or HEPA vacuuming of the following:

(A) areas where metal containing wastes generated from metal grinding or metal cutting operations are stored, disposed of, recovered or recycled;

(B) floors within 20 feet of a work station or workstations for metal grinding or metal cutting operations;

(C) floors within 20 feet of any entrance/exit point for a temporary enclosure, building or total enclosure; and

(D) floors within 10 feet of an emission control device dedicated to metal grinding or metal cutting operations.

(3) The owner or operator of a metal forging facility that is conducting metal grinding or metal cutting operations or small part grinding, shall additionally conduct the following housekeeping measures:

(A) Monthly wet cleaning or HEPA vacuuming of floors of a temporary enclosure, building or total enclosure areas where metal grinding or metal cutting operations occur.

(B) Storeing all materials capable of generating any amount of fugitive metal dust including, but not limited to, metal containing waste generated from the housekeeping requirements of this subdivision and the maintenance and repair activities of subdivision (g), in sealed containers, unless located within a total enclosure;

(C) Prohibiting ~~C~~ccompressed air cleaning operations or dry sweeping ~~shall not be conducted~~ within 30 feet of any metal cutting or metal grinding operation, unless the compressed air cleaning operation or dry sweeping is conducted under an emission control device pursuant to subdivision (e).

(g) Maintenance and Repair Activity Requirements

On and after [30 days after Date of Rule Adoption], the owner or operator of a metal forging facility shall implement the following measures when conducting maintenance and repair activities as defined in paragraph (c)(14):

(1) No later than one hour after completion of maintenance or repair activity, the owner or operator of a metal forging facility shall wet clean or HEPA vacuum the floors within 20 feet of where the maintenance or repair activity was conducted.

(2) Maintenance and repair activity shall be stopped immediately when instantaneous wind speeds are $\geq$ 20 mph, unless the activity is being conducted within a building or temporary enclosure. Maintenance or repair activity may be continued if it is necessary to prevent the release of metal particulate emissions.

(3) Wet clean or ~~a~~ HEPA vacuum all metal-contaminated equipment and materials used for maintenance and repair activity immediately after completion of work in a manner that does not generate fugitive metal dust.

(h) Source Tests

(1) Beginning [Date of Adoption], the owner or operator of a metal forging facility shall conduct the following source tests for any emission control device subject to subdivision (e):

(A) a source test for PM emissions once every 12 months to demonstrate compliance with the emission standard specified in subdivision (e), including confirmation of the capture velocity referenced in paragraph (e)(4). If the most recent source test demonstrates 50% or less of the PM emissions standard required under subdivision (e), in which case the next test for PM emissions from that emission control device may be performed no later than 24 months after the date of the most recent test;

(B) a source test for multiple metal emissions once every 48 months; and

(C) a source test for hexavalent chromium emissions once every 48 months. The owner or operator of a metal forging facility shall be exempt from the requirement to source test for hexavalent chromium if a metals analysis by X-ray fluorescence of bulk samples from the baghouse catch demonstrates a total chromium concentration of no greater than 1% by weight. The metals analysis by X-ray fluorescence shall be conducted upon each removal or disposal of the baghouse catch. If a metals analysis by X-ray fluorescence demonstrates a total chromium concentration of greater than 1% by weight, the owner or operator shall conduct a hexavalent chromium emissions source test for the associated baghouse within 60 days of the

analysis, with subsequent tests conducted once every 48 months from the date of the most recent hexavalent chromium emissions test.

(2) The owner or operator of a metal forging facility with an existing, SCAQMD-permitted metal grinding or metal cutting emission control device in operation before [Date of Adoption], shall submit a source test protocol for the initial source test to demonstrate compliance with paragraph (h)(1) to the Executive Officer for approval no later than [60 days after Date of Rule Adoption]. Subsequent source test protocols for source tests conducted after the initial source test shall be submitted to the Executive Officer for approval no later than 90 days prior to the compliance deadline to conduct the next source test to demonstrate compliance with (h)(1). The initial source test protocol may be used for subsequent source tests if there are no changes.

(3) The owner or operator of a metal forging facility with a new or modified metal grinding or metal cutting emission control device with initial start-up on or after [Date of Rule Adoption], shall submit a source test protocol for the initial source to demonstrate compliance with paragraph (h)(1) to the Executive Officer for approval no later than 30 days after initial start-up. Subsequent source test protocols for source tests conducted after the initial source test shall be submitted to the Executive Officer for approval no later than 90 days prior to the compliance deadline to conduct the next source test to demonstrate compliance with (h)(1). The initial source test protocol may be used for subsequent source tests if there are no changes.

(4) Source test protocols required under subdivision (h) shall include the source test criteria of the end user and all assumptions, required data, and calculated targets for testing the following:

(A) Target particulate mass emission standard;

(B) Preliminary target pollutant analytical data;

(C) Planned sampling parameters; and

(D) Information on equipment, logistics, personnel, and other resources necessary for an efficient and coordinated test.

(5) The owner or operator of a metal forging facility shall conduct the source tests specified in paragraph (h)(1) no later than 60 days from approval of the source test protocol, unless otherwise approved in writing by the Executive Officer.

(6) If the monitored pressure across the HEPA filter is not maintained pursuant to paragraph (i)(4), the following source tests for the emission control device that triggered the monitored pressure change shall be performed no later than 60 days

after the continuous data acquisition system indicated the pressure across the HEPA filter was not maintained:

(A) a source test for PM emissions;

(B) a source test for multiple metals; and

(C) a source test for hexavalent chromium unless the facility conducts metal analyses pursuant to subparagraph (h)(1)(C) that demonstrate all bulk samples from the baghouse catch are no greater than a concentration of 1% by weight for total chromium.

(7) The owner or operator shall notify the Executive Officer in writing 10 calendar days prior to conducting any source test required by this subdivision.

(8) The owner or operator shall notify the Executive Officer within three business days (Monday through Friday) of when the facility knew or should have known of any source test result that exceeds the emission standard specified in subdivision (e). Notifications shall be made to 1-800-CUT-SMOG and followed up in writing to the Executive Officer with the results of the source tests within seven business days of notification.

(9) Source tests shall be conducted representative of typical operating conditions and in accordance with any of the following applicable test methods:

(A) SCAQMD Method 5.1 – *Determination of Particulate Matter Emissions from Stationary Sources Using a Wet Impingement Train*

(B) SCAQMD Method 5.2 – *Determination of Particulate Matter Emissions from Stationary Sources Using Heated Probe and Filter*

(C) SCAQMD Method 5.3 – *Determination of Particulate Matter Emissions from Stationary Sources Using an In-Stack Filter*

(D) CARB Test Method 425 – *Determination of Total Chromium and Hexavalent Chromium Emissions from Stationary Sources*

(E) CARB Method 436 – *Determination of Multiple Metal Emissions from Stationary Sources*

(F) U.S. EPA Method 306 – *Determination of Chromium Emissions from Decorative and Hard Chromium Electroplating and Chromium Anodizing Operations – Isokinetic Method*

(10) The owner or operator may use alternative or equivalent source test methods as defined in 40 CFR 60.2, if approved in writing by the Executive Officer, in addition to the Air Resources Board, or the U.S. EPA, as applicable.

(11) The operator shall use a test laboratory approved under the SCAQMD Laboratory Approval Program for the source test methods cited in this subdivision. If there is

no approved laboratory, then approval of the testing procedures used by the laboratory ~~shall~~may be granted by the Executive Officer on a case-by-case basis based on SCAQMD protocols and procedures.

(12) When more than one source test method or set of source test methods are specified for any testing, the application of these source test methods to a specific set of test conditions is subject to approval by the Executive Officer. In addition, a violation established by any one of the specified source test methods or set of source test methods shall constitute a violation of the rule.

(13) Testing conducted by the facility, by the SCAQMD, or by a contractor acting on behalf of the SCAQMD or the facility to determine compliance with this rule shall be performed according to the most recent SCAQMD-approved test protocol for the same purpose or compounds.

(14) Reports from source testing conducted pursuant to subdivision (h) shall be submitted to the SCAQMD in 60 days or less after completion of testing.

(15) The Executive Officer may approve a request for an extension of the compliance deadline date specified in paragraph (h)(1) if the facility can demonstrate that it timely filed a complete source test protocol and associated information, and is unable to meet the deadline due to reasons beyond the facility's control. The request shall be submitted to the Executive Officer no later than 30 days before the compliance deadline date.

(i) Monitoring

(1) Bag Leak Detection System

The owner and operator of a metal forging facility shall apply for a permit to install, operate, calibrate and maintain a Bag Leak Detection System pursuant to SCAQMD Rule 1155.

(2) The corresponding duct static pressure for the minimum hood induced capture velocity specified in paragraph (e)(4) shall be accurately measured once per operating day using the measurement procedures specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Operation and Maintenance*, published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with the SCAQMD, or any more stringent methods required by OSHA or CAL-OSHA. Duct static pressures shall be established or re-verified during the capture efficiency testing specified in subparagraph (h)(1)(A).

(3) The owner or operator of a metal forging facility shall continuously monitor the pressure drop across the HEPA filter of an emission control device for metal grinding or metal cutting operations with a mechanical gauge. The gauge shall be located so that it is easily visible and in clear sight of the operator or maintenance personnel. For the purposes of this requirement, the owner or operator shall ensure that the monitoring device:

(A) Is equipped with ports to allow for periodic calibration in accordance with manufacturer's specifications;

(B) Is calibrated according to manufacturer's specifications at least once ~~a frequency of not less than twice~~ every calendar year;

(C) Is equipped with a continuous data acquisition system (DAS). The DAS shall record the data output from the monitoring device at a frequency of not less than once every sixty (60) minutes;

(D) Generates a data file from the computer system interfaced with each DAS each calendar day saved in Microsoft Excel (xls or xlsx) format or other format as approved by the Executive Officer. The file shall contain a table of chronological date and time and the corresponding data output value from the monitoring device in inches of water column. The operator shall prepare a separate data file each day showing the 4-hour average pressure readings recorded by this device each calendar day; and

(E) Is maintained in accordance with manufacturer's specifications.

(4) If the pressure across the HEPA filter is not maintained within ~~-1/2 times to +2 times the inches of water of the value established during the performance test to demonstrate compliance with the emission limitation for the emission control device based on~~ the range specified in the Permit to Operate for the emission control device as determined by hourly or more frequent recordings by the DAS for the averaging periods below, the owner or operator shall conduct a source test pursuant to paragraph (h)(6).

(A) A 4-hour time period on 3 or more separate days over 60 continuous days; or

(B) Any consecutive 24-hour period.

(5) For each emission collection system subject to this subdivision, confirmation of the capture velocity referenced in paragraph (e)(4) and a periodic smoke test shall be conducted~~,~~ at least once every 3 months using the procedure set forth in Appendix 1 of this rule~~unless performing such test~~. The smoke test need not be

performed if it is demonstrated to the Executive Officer that it presents an unreasonable risk to safety~~, at least once every 3 months using the procedure set forth in Appendix 1 of this rule~~.

(j) Recordkeeping

(1) The owner or operator of a metal forging facility shall keep records of the following, as applicable:

(A) Monthly records of weight of metal waste collected by the baghouse catch, including, if applicable, any metal analyses for bulk samples of baghouse catches conducted pursuant to subparagraph (h)(1)(C);

(B) Monthly records of weight of metal waste collected by housekeeping activities required by subdivision (f);

(C) Records of dates when bags for baghouses, cartridges, or HEPA filters are replaced;

(D) Records of total enclosure inspections required by paragraph (d)(5), periodic smoke tests required by paragraph (i)(4), emission control device inspection and maintenance required by paragraph (e)(5), housekeeping activities required by subdivision (f), maintenance and repair activities required by subdivision (g), including the name of the person performing the activity, and the dates and times at which specific activities were completed; and

(E) Log of reports to the facility regarding odors or other air quality related issues that includes the date, time, name and contact information for the person reporting the issue, source of the issue, how the issue was resolved, and how the issue will be avoided in the future.

(2) For the purposes of paragraph (i)(1), records kept shall include:

(A) Facility name;

(B) Facility representative for maintaining the Baghouse Leak Detection System;

(C) Date and time of routine maintenance and inspections conducted on Bag Leak Detection System;

(D) The date and time of any alarm, including length of the alarm time, and cause of the alarm;

(E) Whether visible emissions occurred;

(F) Total operating hours of the baghouse; and

(G) Any additional information as specified by the Executive Officer.

(3) The owner or operator shall maintain all records required in this subdivision for at least five years and shall be made available to the SCAQMD personnel upon request with at least the two most recent years kept onsite.

(k) Signage

(1) The owner or operator of a metal forging facility shall install a sign no later than [30 days after Date of Rule Adoption] that says, "TO REPORT AIR QUALITY ISSUES SUCH AS ODORS, DUST, OR SMOKE FROM THIS FACILITY, CALL EITHER THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG, OR [*FACILITY CONTACT PHONE NUMBER*]" and meets the following requirements, unless otherwise approved in writing by the Executive Officer:

(A) Installed within 50 feet of ~~each~~the main entrance of the facility that is visible to the public, and in a location on each side of the facility that is visible to the public;

(B) Measures at least 16 square feet; and

(C) Displays lettering at least 3 inches tall with text contrasting with the sign background.

(l) Permit Application Submittals for Existing Metal Grinding or Cutting Operations

For metal grinding or metal cutting operations existing prior to [Date of Rule Adoption], the owner or operator shall submit complete permit applications no later than [60 days after Date of Rule Adoption] for all construction and/or necessary equipment required under paragraphs (d)(8) – Total Enclosures with Negative Air, (e)(1) – Emission Control Devices, and (i)(1) – Bag Leak Detection Systems.

(m) Odor Contingency Measures

(1) The owner or operator of a metal forging facility that has been notified by the Executive Officer of four (4) confirmed odor complaints in any consecutive (6) months, shall implement one of the following odor reducing measures specified in subparagraphs (m)(1)(A) through (m)(1)(D):

(A) Operational changes to reduce odors including, but not limited to, changing ingress and egress openings that may affect the release of odors from a total enclosure, moving grinding stations further from openings within the total enclosure;

(B) Process changes to reduce odors including, but not limited to, use of different materials in the grinding element, and materials applied before, during, or after metal grinding or metal cutting operations;

(C) Enhancements to the temporary enclosure, building, or total enclosure to reduce odors escaping the total enclosure including, but not limited to, installation of booths or barriers around grinding stations to contain odors from escaping the total enclosure, upgrade openings used for ingress or egress that will provide even greater control of odors escaping total enclosure; or

(D) Any other measure or modification, approved by the Executive Officer, that can help to reduce or minimize odors emanating from the metal grinding or metal cutting operation shall be implemented on a schedule approved by the Executive Officer.

(2) The owner or operator of a metal forging facility that has been notified to implement an odor reducing measure pursuant to paragraph (m)(1) shall complete implementation of the measure within:

(A) 60 days after notification by the Executive Officer in paragraph (m)(1) for a measure selected under subparagraphs (m)(1)(A) or (m)(1)(B);

(B) 90 days after notification by the Executive Officer in paragraph (m)(1) for a measure selected under subparagraph (m)(1)(C); ~~and~~

(C) 6 months after a Permit to Construct for the emission control device is issued by the Executive Officer for the installation or modification of equipment necessary to implement a measure selected under subparagraphs (m)(1)(A) through (m)(1)(C); and

(D~~C~~) a schedule as approved by the Executive Officer for a measure selected under subparagraph (m)(1)(D).

(3) Within 30 days after completing the implementation of a measure required under paragraph (m)(1), the owner or operator of a metal forging facility shall provide a description of the measure that was implemented and notify the Executive Officer that implementation of the measure has been completed.

(4) The consecutive 6-month period referenced in paragraph (m)(1) shall be restarted upon full implementation of an odor reducing measure specified in subparagraphs (m)(1)(A) through (m)(1)(D).

(n) Rule 219 Exemption

Beginning [Date of Adoption], any equipment subject to this rule and any associated emission control devices shall no longer be exempt from the requirement of a written permit pursuant to SCAQMD Rule 219.

Appendix 1 - Smoke Test to Demonstrate Capture Efficiency for Ventilation Systems of (an) Emission Control Device(s) Pursuant to Paragraph (i)(4).

1. Applicability and Principle

1.1 Applicability. This method is applicable to all point sources where an emission control device is used to capture and control emissions from metal grinding or metal cutting operations.

1.2 Principle. Collection of emissions from metal grinding or metal cutting sources is achieved by the ventilation system associated with the emission control device for metal grinding or metal cutting equipment. Emission control efficiency at the exhaust of an emission control device is related to capture efficiency at the inlet of the ventilation system. For this reason, it is imperative that 100% capture efficiency is maintained. A smoke device placed within the area where collection of emissions by the ventilation system occurs reveals this capture efficiency.

2. Apparatus

2.1 Smoke Generator. The smoke generator shall be adequate to produce a persistent stream of visible smoke (e.g., Model S102 Regin Smoke Emitter Cartridges~~#15-049 Tel-Tru™ T-T Smoke Sticks from E. Vernon Hill, Incorporated~~). The smoke generating device should not provide excessive momentum to the smoke stream that may create a bias in the determination of collection efficiency. If the device provides slight momentum to the smoke stream, it shall be released perpendicular to the direction of the collection velocity.

3. Testing Conditions

3.1 Equipment Operation. Any equipment to be smoke tested that is capable of generating heat as part of normal operation must be smoke tested under those normal operating conditions. Operating parameters of the equipment during the smoke test shall be recorded. The smoke test shall be conducted while the emission control device is in normal operation. The position of any adjustable dampers that can affect air flow shall be documented. Precautions should be taken by the facility to evaluate any potential physical hazards to ensure the smoke test is conducted in a safe manner.

3.2 Cross Draft. The smoke test shall be conducted while the emission control device is in normal operation and under typical draft conditions representative of the facility's metal grinding or metal cutting operations. This includes cooling fans and openings affecting draft conditions around the metal grinding area including, but not limited to, vents, windows, doorways, bay doors, and roll-ups, as well as the operation of

other work stations and traffic. The smoke generator must be at full generation during the entire test and operated according to manufacturer's suggested use.

4. Procedure

4.1 Collection Slots. For work stations equipped with collection slots or hoods, the smoke shall be released at points where metal grinding or metal cutting emissions are generated (e.g. the point where welding or stacking of grids occurs). Observe the collection of the smoke to the collection location(s) of the ventilation system. An acceptable smoke test shall demonstrate a direct stream to the collection location(s) of the ventilation system without meanderings out of this direct path. Smoke shall be released at points not to exceed 12 inches apart across ventilated work areas. Record these observations at each of the points providing a qualitative assessment of the collection of smoke to the ventilation system.

4.2 Equipment Enclosures. Equipment enclosures include equipment where emissions are generated inside the equipment, and the equipment is intended to have inward air flow through openings to prevent the escape of process emissions. The smoke shall be released at points outside of the plane of the opening of the equipment, over an evenly spaced matrix across all openings with points not to exceed 12 inches apart. Observe the inward movement of the smoke to the collection location(s) of the ventilation system. An acceptable smoke test shall demonstrate a direct stream into the equipment without meanderings out of this direct path. Record these observations at each of the points providing a qualitative assessment of the collection of smoke to the ventilation system.

5. Documentation. The smoke test shall be documented by photographs or video at each point that clearly show the path of the smoke. Documentation shall also include a list of equipment tested and any repairs that were performed in order to pass the smoke test. As previously discussed, the documentation shall include the position of adjustable dampers, cross draft conditions, and the heat input of the equipment, if applicable. The documentation shall be signed and dated by the person performing the test. The records shall be maintained on site for at least two years and be made available to SCAQMD personnel upon request.

ATTACHMENT G

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Staff Report
Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities

March 2017

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
GOVERNING BOARD

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WAYNE NASTRI

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INTRODUCTION

The South Coast Air Quality Management District (SCAQMD) is the lead air pollution agency in the South Coast Air Basin (SCAB) and has jurisdiction over all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SCAQMD performs inspections of more than 27,000 facilities in the Basin, in addition to responding to thousands of public complaints regarding air quality.

Proposed Rule 1430 is designed to reduce emissions from metal grinding and metal cutting operations at forging facilities. Both metal grinding and cutting operations are currently exempt from SCAQMD permits, and as such operations are currently an unregulated source category. Although some of the metal grinding operations have air pollution controls, most are not permitted. The issue of grinding emissions at forging facilities was brought to the attention of the SCAQMD based on community complaints regarding odors and visible emissions near a forging facility in the City of Paramount. Based on investigations, the SCAQMD staff identified fugitive metal particulate emissions from Carlton Forge Works' (CFW) grinding operation and the need to control these emissions. During the development of Proposed Rule 1430, staff visited other metal forging facilities throughout the Basin. Similar to CFW, staff found that other forging facilities lacked necessary pollution controls to manage point and fugitive emissions from their metal grinding and cutting operations. Depending on the metal alloys, some metal particulate can be toxic air contaminants posing a potential health risk to the surrounding community if emissions are not well controlled. Proposed Rule 1430 will ensure metal particulate emissions are appropriately vented to pollution control equipment, fugitive emissions are contained within a building enclosure, and housekeeping measures are implemented to further minimize emissions from metal grinding and metal cutting operations at metal forging facilities.

BACKGROUND

In 2012, the SCAQMD began receiving complaints from the public regarding a burning metallic odor and metal particulate in the City of Paramount. Through air quality analysis and investigation of surrounding businesses, Carlton Forge Works (CFW) was identified as a source of these metallic odors, which arise primarily from their metal grinding operations. CFW manufactures forged high-temperature alloy rings for aerospace, gas turbine, and other industries, using metals such as stainless steel, nickel, titanium, aluminum, cobalt, and iron, as well as other high temperature metals with special properties. CFW operates a large grinding room with 25 grinding booths, each equipped with a handheld air grinder or a swing grinder and vented to one of three pieces of air pollution control equipment (baghouses).

In August 2013, the SCAQMD staff began ambient air monitoring at three locations near of CFW to measure the levels of various metals. Figure 1-1 below shows an aerial map of the three ambient air monitors in relation to the CFW facility and the nearby community. Sites #1 and #2 identified in Figure 1-2 are located on Vermont Avenue and represent exposures immediately downwind of CFW. Site #1 was only active August 2, 2013 through October 1, 2013 due to access limitations. Site #2 and #3 began sampling on August 8, 2013 and October 31, 2013, respectively, and are currently collecting samples as of this writing. The sampling schedules are consistent with many of the toxics air monitoring programs conducted by SCAQMD. The

ambient air monitors measure metals from all nearby sources, including CFW and other metal processing facilities, as well as regional background emissions. Based on a review of the air monitoring results, the two main metals of concern, given their toxicity, were nickel and hexavalent chromium.

Figure 1-1: Aerial Map of Ambient Air Monitoring Downwind Carlton Forge Works in Paramount, CA

Nickel and hexavalent chromium levels from Site #3 were generally consistent with background levels based on SCAQMD's Multiple Air Toxics Study (MATES) IV. Although Carlton Forge Works was conducting their metal grinding operation within a building and had pollution controls, point source controls were not operated properly and large vents and bay doors in the building were not containing fugitive emissions. When monitoring began in 2013, nickel levels at Site #2 were as high as 300 ng/m^3, with an average of about 90 ng/m^3. Nickel levels were elevated in 2013 as shown in Figure 1-2. As CFW implemented a series of voluntary measures to reduce emissions from their grinding operations beginning in late September 2013, nickel levels decreased. Annual average nickel levels are about 16 ng/m^3. Voluntary measures implemented at CFW are summarized in Figure 1-3 below.

Figure 1-2: Nickel (ng/m^3) from Site #2 (30-Day Rolling Average)

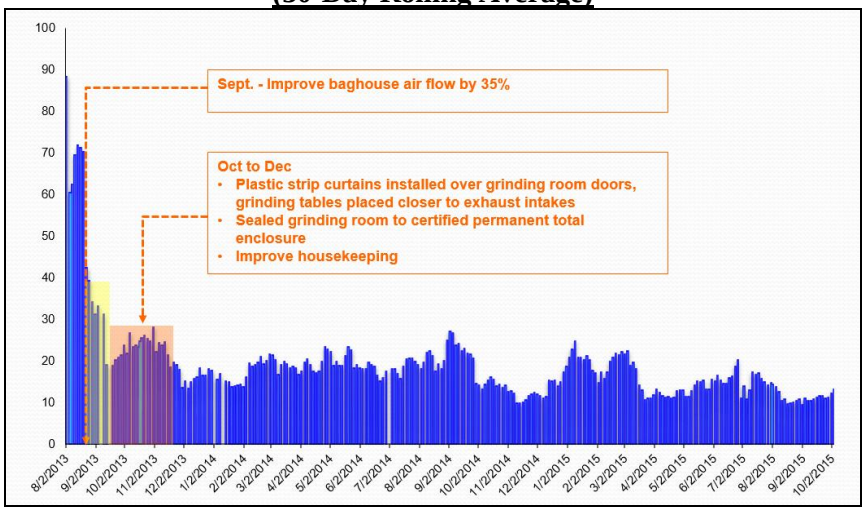
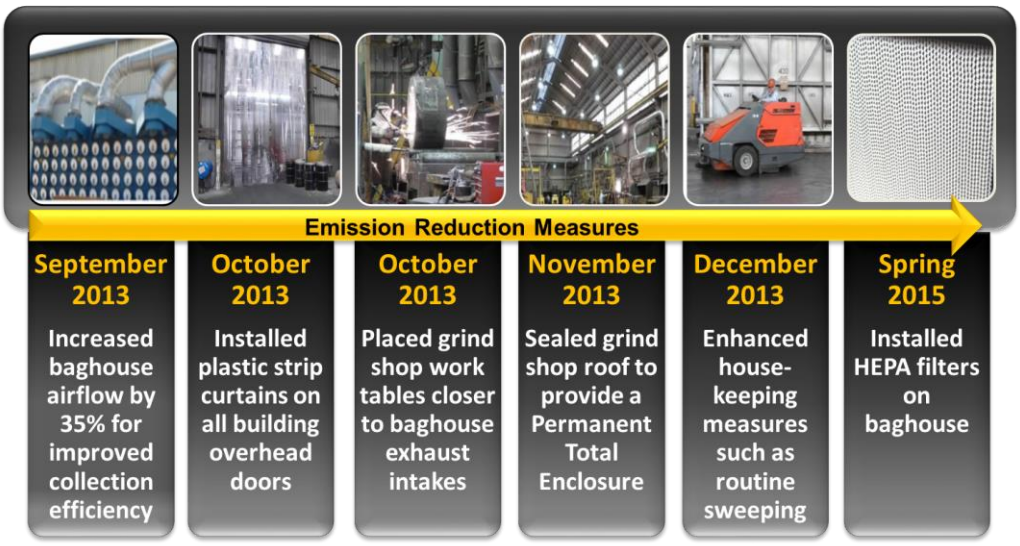


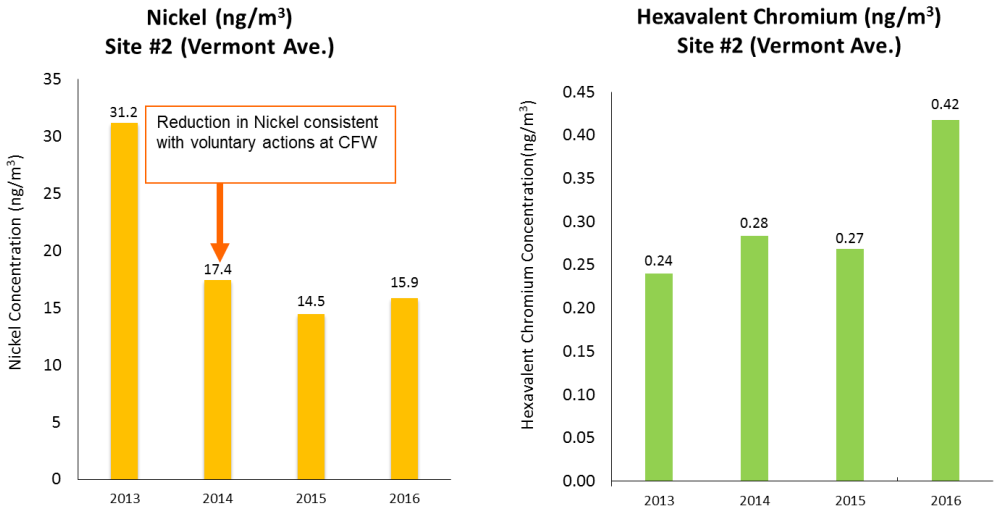
Figure 1-3: Measures Implemented at CFW



As shown in Figure 1-4, average hexavalent chromium levels at Site #2 did not follow the same pattern as the nickel levels. For example, where the nickel levels decreased after 2013, hexavalent chromium levels did not, which indicated that hexavalent chromium could be originating from an operation other than grinding within CFW or possibly a different facility. In addition, in 2016 Site #2 showed an increase in hexavalent chromium levels. As a result, SCAQMD staff began investigating potential sources of hexavalent chromium at CFW as well as other facilities that could be contributing to the increase.

As part of its efforts to understand the hexavalent chromium levels found at Site #2, in October 2016, SCAQMD staff expanded its air monitoring efforts and found elevated levels of hexavalent chromium near CFW that were less than 1 ng/m^3, but still at a level where additional investigation is needed. SCAQMD staff temporarily suspended its investigation near CFW, as resources were needed to address substantially higher levels of hexavalent chromium that were found further south of CFW. The SCAQMD will be resuming the investigation of source(s) of hexavalent chromium near CFW, and if needed, additional controls will be addressed in a future rule development effort. More details regarding air monitoring near CFW and in the City of Paramount can be found at: http://www.aqmd.gov/home/regulations/compliance/air-monitoring-activities.

Figure 1-4:
Average Nickel and Hexavalent Chromium Levels (ng/m^3) at Site #2



SAMPLING FROM OTHER METAL FORGING FACILITIES

In addition to the sampling and monitoring done at Carlton Forge Works, SCAQMD staff conducted glass plate sampling on-site at Press Forge, Weber Metals, Inc. and Schlosser Forge. Glass plates are typically left at location for a period 7 consecutive days. Although the deposition plate results cannot determine ambient concentrations, they provide a good indication of gradients and the extent of potential off site impacts. Glass plates sampling was conducted at Schlosser Forge, Press Forge, and Weber Metals, Inc. in May 2014.

Glass plates were placed near buildings or roof tops where grinding operations were occurring to collect metal particulate. The results of the glass plate samples showed that PM concentrations from the three other forging facilities were as substantial or more substantial, than the PM concentrations found at CFW prior to implementing measures to reduce emissions from their grinding operation. The glass plate samples also confirmed the presence of a variety of metal particulates, some of which are toxic such as arsenic and nickel. The glass plate samples also showed the presence of chromium, but did not distinguish the type of chromium such as hexavalent or trivalent chromium.

The mass concentrations of metals observed at Weber Metals, Inc. and Press Forge demonstrated similar results to CFW. All three sites had significant mass concentrations of heavy metals. The highest concentrations were detected on the roof of Press Forge's grinding station where outdoor grinding with no pollution controls were occurring. In late 2016, Press Forge moved their grinding operations in a temporary enclosure with pollution controls. Weber Metals also had high concentrations of heavy metals with values exceeding those measured at CFW. The presence of heavy metals, some of which are toxic air contaminants, in high concentrations at other metal forging facilities indicate that fugitive metal particulates were not exclusive to grinding operations at CFW. High concentrations of nickel were found near the pollution control

equipment at Schlosser Forge, indicating that metal particulate was escaping the baghouse and inadequate operation and maintenance of the pollution controls for the grinding room.

Figure 1-5:
Glass Plate Sampling at Metal Forging Facilities (2014)

	Location Description	As	Ba	Ca	Cd	Co	Cr	Cu	Fe	K	Mn	Mo	Ni	Pb	Sb	Sn	Sr	Ti	V	Zn
Carlton Forge	Roof of grinding room	6.81	418	18,500	2.12	555	607	665	35,300	6,220	430	217	3,340	89.8	7.98	33.1	181	2,320	134	1,300
	West side of roof of saw bldg	6.98	491	19,300	2.37	761	815	815	33,500	7,260	449	287	4,500	130	9.71	31.9	205	2,390	130	1,330
	East side of roof of saw bldg	7.09	521	18,000	2.43	556	661	624	26,200	6,870	391	279	3,620	94.3	9.53	31.2	215	2,470	118	1,500
	Roof of Residence across street from facility	7.63	547	21,700	1.99	258	358	746	27,100	7,690	438	149	1,750	133	10.3	42.8	185	2,290	96.8	1,270
	Top of fence along perimeter of parking lot	8.29	583	20,700	1.51	146	234	271	28,200	8,810	470	89.8	1,020	99.6	14.3	30.7	207	2,120	82.1	1,140
Weber Metals	Site #1 Roof of Bldg O	16.3	513	34,400	1.66	17.1	98.4	450	28,000	12,000	467	37.3	172	91.2	9.24	20.4	229	2,730	302	1,720
	Site #2 Open area next to tracks	17.4	2,370	35,100	1.39	17.6	160	578	71,500	12,500	637	35.5	215	98.7	6.92	21.8	272	2,720	237	1,630
	Site #4 Top of Transformer at North perimeter of facility	10.5	453	29,500	1.89	18.7	310	731	42,300	7,200	454	163	862	100	10.9	74.3	241	8,710	568	2,110
	Site #5 Roof of Bldg P	9.62	521	28,600	1.53	20.9	224	632	36,100	9,160	606	67.2	508	99.8	8.54	35.1	204	12,500	736	1,790
	Site #6 Top of Patio adjacent to Bldg L	6.98	575	31,100	2.37	13.5	86.8	654	27,700	7,060	398	23.8	151	211	87.5	89.8	184	1,850	75.8	2,080
	Site #7 Roof of storage shed at Promise Hospital	18.3	495	14,300	3.14	48.9	1,990	997	161,000	6,690	1,130	995	5,810	89.3	12.1	77.6	167	10,200	683	864
Press Forge	Site #1 Roof of outside grinding station	6.61	59.3	5,780	4.67	1,340	5,070	722	194,000	1,710	1,190	1,640	18,200	15.3	0.08	6.1	63.3	7,150	774	154
	Site #2 Roof of larger outside grinding station	8.46	38.2	3,080	6.53	791	5,140	786	197,000	1,010	1,230	2,290	18,600	14.7	0.15	7.7	51.5	7,030	919	81.1
	Site #3 Adjacent to Forge Building	12.5	333	17,200	2.4	60.1	1,170	364	116,000	4,980	835	634	4,110	55.2	5.4	85	153	9,770	794	746
	Site #4 Adjacent to 2nd Forge Building	9.65	481	20,600	2.6	36.2	224	247	39,100	8,570	532	125	757	618	9.3	503	183	2,840	136	1,170
	Site #5 North Perimeter of facility	9.73	527	20,300	3.26	31.3	181	437	32,700	7,910	473	55.1	430	414	10.3	18	179	2,510	109	1,150
	Site #6 Adjacent to Eng Building	11.2	344	19,900	2.64	34.1	711	292	79,400	5,650	707	380	2,730	81.3	6.9	62	164	6,220	440	894
	Site #7 Storage shed at Promise Hospital	13.9	430	20,400	3.66	83.2	1,260	468	105,000	7,070	838	769	4,340	70	8.6	112	184	9,510	643	769
Schlosser	Admin Bldg roof	38.4	591	25,062	3.4	329	574	641	44,791	7,607	1133	667.8	2040	106.4	12.2	31	189	1,965	85.02	1,884
	Roof of container adjacent to bldg 4	15.3	450	27,871	4.35	1797	2785	635	59,792	6,288	1170	1505.7	12434	90.78	5.33	20.2	181	2,716	142.9	1,861
	Southeast end of grinding room	20.5	444	25,233	2.65	1072	774	503	36,556	6,027	1084	527.36	7277	107.1	9.97	21.5	213	2,073	99.48	1,751
	Southeast end of grinding room adjacent to emission contr	12.2	248	14,636	4.46	8657	6983	371	27,754	3,531	546	2195.6	58462	48.88	3.81	9.37	148	2,661	149.4	1,035
	On top of modular between bldgs 2 and 3	11.2	243	19,163	3.74	4540	3742	483	34,852	3,631	599	1758.1	31059	46.04	2.3	10	124	1,988	148.3	1,477

NEED FOR PROPOSED RULE 1430

Metal grinding and metal cutting operations are currently exempt from permitting by the SCAQMD and is currently an unregulated source. Through the rule development process, the SCAQMD has obtained additional information about metal grinding and metal cutting operations at forging facilities. SCAQMD staff found similar and in most cases lesser pollution controls for metal grinding operations at other forging facilities as compared to Carlton Forge Works. ~~As a result, s~~Some facilities are currently conducting metal grinding and metal cutting operations with no pollution controls. Other facilities that have pollution controls, are not properly operating and maintaining their pollution controls. During the rule development process, SCAQMD staff has visited many of the forging facilities that will be subject to Proposed Rule 1430. The following are key findings from the site visits:

- Prior to November 2016, there were four facilities that were conducting metal grinding operations in the open air. Because of the fugitive nature of grinding operations, with no containment structure such as an enclosure and no air pollution control device, the metal particulates were being released in the open air and into the community. One of the three facilities recently moved their grinding operations within a building enclosure and is in the process of constructing a total enclosure. Another one of the facilities is in the process of moving their grinding operations within an enclosure also.
- Although air pollution controls were not previously required by the SCAQMD, 14 forging facilities currently have some type of air pollution control device. However, many baghouses did not appear to have proper ventilation, operation, and maintenance of pollution controls. Evidence that there were issues with the existing pollution controls was that the metal particulates during the grinding operations were not moving towards the control equipment, visible emissions were escaping the ventilation equipment, glass plate samples near the control equipment showed high levels of metal particulate.

- Most of the facilities that are currently conducting grinding operations within a structure have large openings for ingress and egress, and large vents and openings on the sides and top of the building and/or the structure is not well maintained and does not adequately contain fugitive metal particulate.
- Housekeeping measures varied at each facility. There was variation in the cleaning method, such as using brooms to mobile vacuum sweepers, variation in the frequency, and variation in the areas cleaned, such as cleaning the inside and/or outside.

The general action of metal grinding is prone to generate fugitive metal particulate, particularly if the grinding operation is not properly controlled. Similar to Carlton Forge Works other metal forging facilities subject to Proposed Rule 1430 process titanium, aluminum and/or high nickel alloys all of which contain some level of toxic metals. Given that these alloys contain some level of toxic metals, and that many of the facilities subject to Proposed Rule 1430 lack sufficient pollution controls, it is expected that similar and possibly higher PM and toxic metal levels are emitted from other forging facilities when compared to Carlton Forge Works. Some facilities operate more intense types of grinding operations, such as billet grinding, while others conduct swing and hand grinding operations like Carlton Forge Works.

Proposed Rule 1430 is needed to reduce metal particulate emissions from metal grinding and metal cutting operations at metal forging facilities to ensure that these operations have the appropriate pollution control equipment, are conducted within an enclosure to ensure fugitive emissions that do not make it to the control device are contained, and basic housekeeping requirements are followed to ensure any accumulation of metal particulate in around grinding operations is not re-entrained into the air or tracked outside of the facility. Given that all metal facilities subject to the proposed rule process alloys that contain some level of toxic metals it is expected that Proposed Rule 1430 will concurrently reduce toxic metal particulate.

PUBLIC PROCESS

PR 1430 is being developed through a public process. A working group has been formed to provide the public and stakeholders an opportunity to discuss important details about the proposed rule and provide the SCAQMD staff with important input during the rule development process. The working group and interested parties are comprised of a variety of stakeholders including representatives from industry, consultants, environmental groups, community groups, and public agency representatives. The SCAQMD staff has held six~~five~~ (6~~5~~) working group meetings. To date, the working group has convened on October 7, 2015, September 14, 2016, October 26, 2016, December 1, 2016, ~~and~~ January 11, 2017, and February 1, 2017. At the request of community representatives, the September and December working group meetings were held in the City of Paramount. A Public Workshop was held on January 19, 2017 to present the proposed rule and receive public comment. Additionally, a Public Consultation meeting was held on January 25, 2017 in the City of Paramount in a format similar to the Public Workshop.

INDUSTRY PROCESS DESCRIPTION

The following paragraphs provide a general overview of the manufacturing processes and emission sources for the industry source category subject to Proposed Rule 1430. Specifically, SCAQMD staff has provided general operation and emissions source information for metal forging.

Industry Process Description – Metal Forging and Billet Cutting

Forging is a manufacturing process where metal is pressed, pounded, or squeezed under great pressure into high strength parts known as forgings. The process is normally performed hot by preheating the metal to a desired temperature before it is worked. Any metal can be forged, however, some of the most common metals include, carbon steel, alloy steel, stainless steel, very hard tool steels, aluminum, titanium, brass, copper, cobalt, nickel, and molybdenum. These metals are found in billets or ingots that are delivered to the respective forging company. The forging industry is composed of plants that: make parts to order for customers (custom forgings), make parts for their own company's internal use (captive forgings), or make standard parts for resale (catalog forgings). Metal forging creates parts that vary in size, shape, and sophistication. Some of the largest customer markets include: aerospace, national defense, automotive, oil industry, agriculture, construction, and general industrial equipment. The applicable NAICS code for these industries are 332111, Iron and Steel Forging, and 332112 Nonferrous Forgings. The following process description reflects the operational characteristics at metal forging facilities.

Process Description

Metal forging is done because it strengthens the material by sealing cracks and closing empty spaces within the metal. The hot forging process will highly reduce or eliminate inclusions in the forged part by breaking up impurities and redistributing their material throughout the metal work. Forging a metal will alter the metal's grain structure creating a material of increased strength. This makes forging more advantageous than casting or machining. In metal forging operations, a metal ingot or billet is prepared to be the correct pre-dimensions prior to going through forging. This can include cutting, sawing, grinding, or torch cutting.

Preparation for Forging

Billet Cutting or Sawing

A processed metal billet or ingot is received by the metal forging facility. In order to forge the piece of metal, the metal forging facility may need to reduce the size. This is done by cutting or sawing. At the metal forging facility, the unprocessed metal billet or ingot is place in a sawing machine. The sawing machine is equipped with a blade capable of cutting into a metal billet or ingot at a slow rate. Typically, a continuous flow of metal removal fluid and coolant is supplied where the blade makes contact with the metal. This helps maintain the blade at a cooler temperature with a co-benefit of preventing metal emissions. The metal ingot or billet is cut to the desired dimensions.

Metal Grinding Operations

Irregularities observed on the billet or ingot can be removed via grinding which will create the desired finish and dimensions prior to forging. Based on site visits to the forging facilities, SCAQMD staff identified five categories of metal grinding activities: billet grinding, swing grinding, stand grinding, large and small part grinding, and torch cutting. Based on observations, all of these activities have the ability to generate fugitive metal particulate if not properly controlled. Each of these metal grinding activities are discussed below.

- *Billet grinding*
  Billet grinding consists of large traveling grinders designed to prepare large billets prior to forging. The billet grinder would traverse the entire length of the billet, going back and forth to create the appropriate dimensions. All billet grinders subject to PR 1430 are vented to baghouses without HEPA filters.

- *Swing grinding*
  Swing grinders are rugged, heavy duty grinders with full lateral movement to prepare medium sized billets. An employee manually operates them. Multiple levels of control were observed ranging from a baghouse with HEPA filters to no air pollution controls.

- *Stand grinding*
  Stand grinders are designed for smaller castings and forging. Mounted in a permanent position, utility grinders have a slotting wheel on one end for reaching into recesses of the material. Multiple levels of controls were observed ranging from venting to a baghouse to not venting to any air pollution controls.

- *Large and small grinding*
  Hand grinding involves using power tools used for preparing, cutting, grinding, and polishing forgings of various sizes. Multiple hand grinding stations can be in one room or one area. Larger forgings utilize larger hand grinders, while smaller forgings utilize smaller hand grinders.

- *Torch Cutting*
  Torch cutting is a process by which metal is preheated with a flame and then oxidized rapidly and removed by a jet of oxygen issued centrally through the preheating flame. Torch cutting in the metal forging industry often occurs using acetylene gas and is used to remove flash (excess metal) from large metal parts that have been forged.

  Basic torch cutting equipment consists of two high-pressure cylinders (one apiece for oxygen and acetylene) and two corresponding pressure regulators. A dual-line hose transfers oxygen and acetylene from the regulators to the torch handle. The torch handle can hold a cutting attachment or cutting tip that controls the thickness of metal being cut, along with the gas pressures set at the regulators. Torches that use oxygen and acetylene reach a working temperature of 5,620 degrees F.

- Heating
  Metal billets or ingot are heated to the desired temperature prior to and/or during the forging process. The heated metal billet or ingot become malleable and are able to be forged. Aluminum alloys are heated to 800 °F, while titanium and nickel are heated to temperatures between 1700 and 2300 °F. Furnaces range in heating capacity and size, and typically use

natural gas for heating. The combustion of natural gas produces NOx, SOx, and combustion related PM emissions. The furnaces are regulated under SCAQMD permit process and are evaluated by SCAQMD staff. NOx is regulated by SCAQMD Rule 1147: NOx Reductions from Miscellaneous Sources for non-RECLAIM facilities. Facilities with NOx emissions that exceed more than 4 tons per year can participate in the SCAQMD RECLAIM program. Non-combustion related emissions, such as emissions generated in the oven space of the furnace produced as a result of refractory brick decomposition or off gassing of metals are unknown at this time. Further studies of non-combustion related emissions from metal furnaces are needed.

- Forging

  Forging includes pressing, hammering, rolling, or piercing of metal using a mechanical tool. The type of forges discussed herein are drop forge press, hammer press, and ring rollers. During the forging process, a lubricant is applied to facilitate the release of die and forging material.

  - *Drop Forge*

    It is a forging made in a closed or impression die under a drop or steam hammer. A closed die forging is formed to the required shape and size by machined impression in specifically prepared dies that exert three-dimensional control on the workpiece. Excess metal, known as flash, that did not form in the die will be removed in finishing operations. Open die forging involves the repeated striking of metal in a die to get the desired dimension. The metal piece may be rotated or moved around to get the desired shape.

  - *Hammer Press*

    It is a forging made by means of a hammer. The action of the hammer is that of an instantaneous application of pressure in the form a sudden blow.

  - *Ring Rollers*

    A metal ring preform is rolled between two rolls that move toward each other to form a continuously reducing gap.

  - *Lubricant*

    A liquid or power lubricant is applied to facilitate the release of the die and forged metal. The lubricant can be applied multiple times depending on the forging operation. Visible emissions are observed when lubricants contact the die and forged metal. VOC levels in lubricants are regulated by Rule 1144 - Metalworking Fluids and Direct-Contact Lubricants. Similar to non-combustion emissions from the furnace, emissions from heated process need further study.

Finishing Operations

Following the creation of a forging, physical or chemical methods are utilized to produce dimensional corrections to the forging or perform surface treatment. While preparation operations removed irregularities, finishing operations removed flashing and scale deposits. Methods observed include abrasive blasting, buffing/polishing, sawing and cutting, and grinding.

- Abrasive Blasting
  It is a stream of abrasive material that is propelled against a surface under high pressure to alter the surface. The abrasive material can be composed of metal, silica, or other material. The abrasive blasting process is used to smooth or "clean" forged material. Fugitive metal particulates from the forging and shot material may be generated if not adequately controlled. These emissions can be controlled by operating in a blast cabinet or room vented to an air pollution control system. Varying housekeeping measures can be implemented to reduce the accumulation of particles that can become fugitive. SCAQMD permits are required if the volume of the blasting cabinet is greater than 53 ft^3. Abrasive blasting is regulated under SCAQMD Rule 1140: Abrasive Blasting.

- Sawing Cutting
  It is used to remove portions of forged metal that is not desired in the finished product. This can be flash material or parts of the forging that may be needed to be corrected to meet the correct dimensions.

METAL GRINDING AND CUTTING CONTROL STRATEGIES

The key emission release points for metal forging facilities' metal grinding and cutting operations are point source emission stacks and fugitive emissions. PR 1430 looks to minimize and control these emissions. Uncontrolled grinding or cutting done in the open air is of greatest concern. Emissions are generated at the point of contact where the abrasion or removal of metal occurs. Metal particulates get entrained in the air and are dispersed based on fall-out and dispersion patterns. Additional metal particulates accumulate in metal removal areas. Metal particulates can be tracked out from foot or vehicular traffic. An effective air pollution control system has an effective capture efficiency and effective control technology. Enclosures and capture technology impact the capture rate.

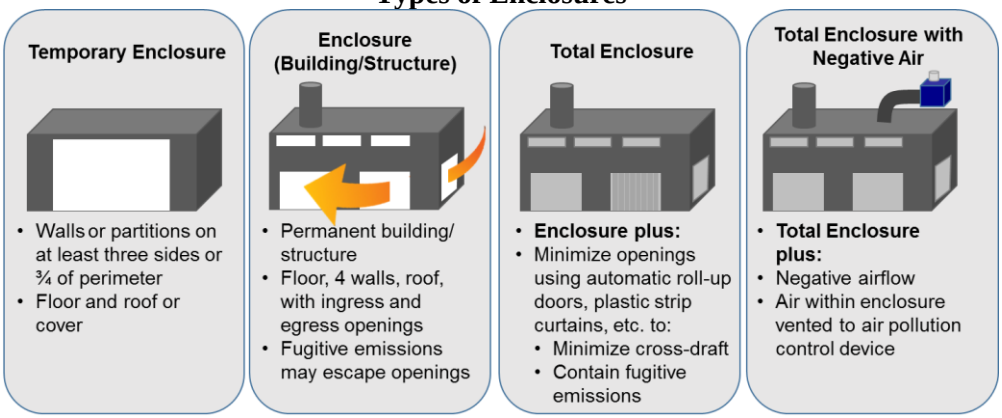
Containment and Collection Strategies

Containment – Enclosures are structures that contain a grinding or cutting operation that can prevent or control the generation of fugitive metal dust. The design of the structure can determine the effectiveness of the enclosure and the collection efficiency of any downstream air pollution control devices. Figure 1-7 shows four types of enclosures: Temporary Enclosure; Building; Total Enclosure; Total Enclosure with Negative Air. The following provides a general description of each of these enclosure types.

- A temporary enclosure is a structure comprised of walls or partitions on at least three sides or three-quarters of the perimeter that has a floor and a roof. As shown in the figure below, one side of the structure may be open.
- A building is a type of enclosure that is a permanent containment structure, completely enclosed with a floor, four walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, and run-off), with openings to allow ingress and egress for people and vehicles.
- A total enclosure is a permanent containment structure, completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, and run-off), with limited openings to allow access and egress for people and vehicles, that is free of breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust.

- A total enclosure with negative air that is vented to pollution control equipment is a total enclosure with negative airflow. This total enclosure must meet the industrial ventilation guidelines at each opening and the air within the enclosure is vented to an air pollution control device.

Figure 1-6:
Types of Enclosures



Collection – A collection system allows air and PM emissions to be collected. Designing the air pollution control equipment with ventilation consistent with the Industrial Ventilation Guidelines ensures that the metal particulate is being properly captured and delivered to the pollution control equipment. The collection system can target an emission point, such as a grinding station, or can be for the entire volume of the enclosure. The collection system consists of an intake port, ducting, and a device that creates the target to be under negative air. The collection system needs to be properly maintained in order to maintain expected capture efficiency, which includes proper intake flow rate, duct integrity, and proper positioning of the grinding activity to the intake vent.

Point Source Emission Control Technologies

Baghouses, cyclones, electrostatic precipitators, and wet scrubbers are technologies typically used to control PM emissions from processes. These technologies can be connected in series to further control PM emissions and reduce the wear and tear on downstream processes. A bag leak detection system (BLDS) monitors the performance of baghouse functions by detecting early bag leak or malfunction.

- Baghouses

  Baghouses used for metal grinding and metal cutting operations at metal forging facilities function like a vacuum cleaner with a fan either blowing air from the grinding source through (positive pressure) the filter or drawing air into (negative pressure) the filter. In either case, air pressure is required to force the air through the filter. The pressure drop is a measurement of this difference in pressure between the clean and dirty sides of the filter. Static pressure gauges can be installed at the inlet and outlet of the fabric filter to determine the unit's pressure drop. As the filter medium becomes clogged with metal dust there is more resistance to air flow, resulting in an increased pressure drop. A baghouse consists of the following components: filter media (for example, fabric, etc.) and auxiliary equipment such as the following; filter media housing, filter cleaning device, collection hopper (metal dust collection drum), and fan. Metal dust layers (dust cakes) deposited on the surface of the bags

need to be cleaned periodically to prevent excessive increases of pressure drops across the baghouse, which could result in bag leaks and improper baghouse function.

Baghouses are typically cleaned in sections, with jets of counter-flowing air used to blow captured dust off the filter and into a hopper. For many baghouses installations, the baghouse follows a routine cycle with the pressure drop increasing as the bag becomes coated with dust, and dropping back to a baseline value after it is cleaned. Pressure drop measurements determine if the filter media is being properly cleaned and whether the baghouse is operating to manufacturer specifications. Increased pressure drops may indicate that the filter media is becoming clogged by debris and indicate ineffective capture and control of PM emissions. Low pressure drop values may indicate holes in the filter media or a mechanical failure of baghouse components that also result in ineffective capture and control of PM emissions. Pressure drop monitoring coupled with a bag leak detection system is a useful indicator of baghouse performance. Common types of baghouses include reverse-air, pulse-jet and cartridge type baghouses. A reverse air-type baghouse uses a low pressure flow of air to break the dust cake and clean the bags of material build-up. Cleaning air is supplied by a separate fan which is normally smaller than the main stream fan, since only one compartment is cleaned at a time. A pulse jet-type baghouse uses a high pressure jet of compressed air to back-flush the bags. Cleaning is performed while the baghouse remains in operation. Cartridge (cylindrical) type filters have pleated, non-woven filter media supported on a perforated metal cartridge. Due to its pleated design, total filtering area is greater than in a conventional bag of the same diameter, resulting in reduced air-to-cloth ratio, pressure drop, and overall collector size. Too heavily loaded cartridges can either be cleaned by a pulse jet compressed air or replaced with new cartridges. Cartridge type filters have high particle collection efficiency of, at a minimum, 99.9 percent, and are usually used for industrial process handing exhaust gas flow rates less than 50,000 cubic feet per minute.

The National Fire Protection Association has special designations for deflagrations from metal dust. Therefore, metal grinding operations that require baghouse emission control technologies choose reliable, economical and effective means of explosion control such as baghouse explosion suppression, containment and venting. Additional information pertaining to these types of protective measures is available in Chapter 8 of the Industrial Ventilation, A Manual for Recommended Practice for Design 28th Edition, published by the American Conference of Governmental Industrial Hygienists, ©2013.

- HEPA Filters

  HEPA filters are classified by their minimum collection efficiency. In general HEPA filters are defined as having a minimum efficiency rating of 99.97% for the removal of 0.3 µm diameter or larger of PM. HEPA filters are best applied in situations where high collection efficiency of submicron PM is necessary, where toxic and or hazardous PM cannot be cleaned from the filter or where the PM is difficult to clean from the filter. Unlike bags or cartridge filters, HEPA filters are not automatically cleaned. When a HEPA filter element becomes loaded with particulate matter, the element is changed out and disposed of as hazardous waste.

HEPA filters are generally installed as the final component in a PM collection system downstream from other PM collection devices such as a baghouse. HEPA filters require pre-filters to remove large PM for dust concentrations greater that 0.03 grams per centimeter squared (g/cm^2) or 0.06 pounds per feet squared (lbs/ft^2). In metal grinding applications at forging facilities, mechanical collectors (e.g., cyclones or venturi scrubbers), standard baghouse or cartridge filters may be required to reduce larger diameter PM. Some existing metal grinding operations at forging facilities in the South Coast Air Basin vent to HEPA filters, where, the HEPA filters serve as the final component in a PM collection system downstream from a baghouse.

- Cyclone

  A cyclone, typically used as a pre-cleaner, does not have a blower mounted or connected to induce the particle-laden exhaust stream. Particles in the gas stream are forced to move toward the cyclone walls by the centrifugal force of the spinning gas. Large particles are removed from the gas stream by inertia and small particles may travel along the gas stream out of the cyclone.

CHAPTER 2: SUMMARY OF PROPOSED RULE 1430

OVERVIEW

PROPOSED RULE 1430

OVERALL APPROACH

Proposed Rule 1430 establishes requirements for all metal forging facilities to reduce fugitive metal emissions coming from metal grinding and metal cutting operations. The requirements include the installation and implementation of point source controls at grinding operations, construction and maintenance of a physical containment, and implementation of housekeeping measures. Point source controls are air pollution control devices that contain or filter metal particulate at grinding operations. Physical containments capture fugitive emissions that are not captured by the point source controls. Instead of particulate being entrained in the air, particulate matter remains in the containment until it is cleaned up. Appropriate housekeeping measures require the cleanup of metal particulate that lands on surfaces in and around facility before it becomes airborne. Due to the variety of control technologies implemented prior to the adoption of PR 1430, interim requirements are established to allow affected facilities time to install and implement the required technology. It should be noted that PR 1430 applies to a previously unregulated source.

PROPOSED RULE 1430

The purpose of PR 1430 is to reduce particulate matter, toxic emissions, and odors from metal grinding and metal cutting operations at metal forging facilities. As previously discussed, metal grinding and cutting operations are currently exempt from SCAQMD permits and are unregulated sources. PR 1430 will establish standards for metal grinding and cutting options for both point sources and fugitive emission sources. Point sources are addressed through requirements for emission control devices, emission standards, and periodic monitoring. Fugitive particulate emissions are addressed through requirements for total enclosures, housekeeping, and maintenance and repair activities. Additionally, signage, reporting, and recordkeeping requirements are also being proposed to ensure compliance, along with contingency odor measures that would be implemented if there are 4 confirmed odor complaints received within a consecutive six month period.

Purpose and Applicability – Subdivision (a) and (b)

PR 1430 applies to metal forging facilities in the SCAQMD that conduct metal grinding or cutting operations onsite. The proposed rule does not apply to metal grinding or cutting operations that are conducted under a continuous flood of metal removal fluid, or grinding activities conducted to maintain or repair equipment at the facility. Based on SCAQMD staff site visits and analysis of compliance and permitting data, there are currently 22 facilities in the District that have been identified to meet the applicability of the proposed rule. These facilities located in the Basin typically support the aerospace industry and represent a stationary source category where metal grinding and cutting operations are an integral part of the facility's process. Additionally, as discussed in Chapter 1, data from SCAQMD monitors near Carlton Forge Works and glass plate collection samples at other metal forging facilities have shown that metal grinding and metal cutting operations contribute to ambient levels offsite and to the surrounding community. After the implementation of voluntary emission reduction controls at Carlton Forge Works, significant reductions of various metals, particularly nickel were observed.

Definitions – Subdivision (c)

PR 1430 includes definitions of the following terms used in the proposed rule. Please refer to subdivision (c) of PR 1430 for the definitions:

- Bag Leak Detection System
- Billet
- Billet Grinding
- Building
- Capture Velocity
- Confirmed Odor Complaint
- Duct Section
- Effective Zone
- Emission Collection System
- Emission Control Device
- Fugitive Metal Dust
- Hand Grinding
- High Efficiency Particulate Arrestors (HEPA)
- Maintenance and Repair Activity
- Metal
- Metal Cutting Operation
- Metal Forging Facility
- Metal Grinding Operation
- Metal Removal Fluid
- Small Part Grinding
- Stand Grinding
- Swing Grinding
- Temporary Enclosure
- Torch Cutting
- Total Enclosure

Requirements

Subdivisions (d) through (n) establish requirements for enclosures, point source emission limits for particulate matter, filter media for final stage emission controls, source testing, housekeeping measures, maintenance and repair activities, monitoring of emission control devices, recordkeeping, signage, permit application submittals for existing grinding and cutting operations, odor contingency measures, and provisions to ensure continuous compliance. Appendix 1 establishes requirements for periodic smoke tests to determine capture efficiency for ventilation systems of emission control devices.

Subdivision (d) – Total Enclosures

Upon adoption of PR 1430, metal forging facilities will be prohibited from conducting any metal grinding or metal cutting operations, or small part grinding outside of a temporary enclosure, building, or total enclosure. As there were no prior requirements for containment of these operations within any type of enclosure, one of the primary objectives of PR 1430 is to have all facilities ultimately conduct metal grinding or cutting within a total enclosure. Metal forging facilities currently conduct metal grinding and metal cutting operations in a variety of enclosures

with some facilities not conducting metal grinding or cutting inside any type of enclosure at all. Therefore, there are two compliance paths depending on whether or not the facility currently conducts metal grinding or cutting inside an existing building as of date of rule adoption.

All metal grinding and metal cutting operations will be required to be conducted in a total enclosure that minimizes the release of fugitive metal dust emissions from passages, doorways, and bay doors by installing automatic roll-up doors, plastic strip curtains, or vestibules for doors and openings of the total enclosure. Alternative methods to minimize the release of fugitive metal dust from the total enclosure may be used if the owner or operator can demonstrate to the Executive Officer (an) equivalent or more effective method(s) to minimize cross-draft conditions. The total enclosure shall be completed:

- No later than 6 months after rule adoption for facilities conducting metal grinding or metal cutting operations in a building (as of date of adoption) that is to be modified to a total enclosure for compliance with the proposed rule; or
- No later than 12 months after rule adoption, if a new total enclosure is constructed to meet the provisions of paragraph (d)(2), provided the owner or operator provides written notice to the Executive Officer within 60 days after rule adoption, that a new total enclosure will be constructed.

Facilities that do not have existing buildings for metal grinding or cutting operations prior to date of adoption, or intend to build a new building, are given additional time to erect a total enclosure as it may take additional time to secure the necessary permits and construct the total enclosure. Provided an owner or operator with an existing building notifies the Executive Officer within 60 days of rule adoption that they will be constructing a new total enclosure (building), the proposed rule will allow 12 months to complete construction of the new total enclosure. Throughout the rulemaking process, the SCAQMD staff became aware that there are some facilities that although they currently are grinding in a building, may elect to house all grinding operations in a single structure and may opt to construct a new total enclosure. During the interim, the owner or operator would still be required to conduct their grinding operations in the existing building until the new total enclosure was completed.

Until the total enclosure requirements of the rule are met, the owner or operator shall conduct metal grinding and metal cutting operations in a temporary enclosure or a building. A temporary enclosure means a structure comprised of a floor, roof, walls and or partitions on at least three sides or three-quarters of the perimeter that surrounds areas where metal grinding or metal cutting operations are conducted. During this time period, the facility shall limit the amount of fugitive metal dust by more frequent and rigorous housekeeping procedures. In addition to the housekeeping provisions specified for total enclosures, the owner or operator will be required to conduct, after or at the end of each operating shift, wet cleaning or HEPA vacuuming of: floors within 30 feet of metal grinding and metal cutting work station(s), floors within 40 feet of an entrance/exit for the temporary enclosure or building, and floors of temporary enclosure or building areas where metal grinding or metal cutting operations occur.

All enclosure types shall be designed in a manner that does not conflict with requirements set forth by the Occupational Safety and Health Administration (OSHA) or the California Division

of Occupational Safety and Health (CAL-OSHA) for worker safety. To ensure that total enclosures are maintained and effective, the owner or operator shall inspect any total enclosure once a calendar month for breaks, cracks, gaps or deterioration that could cause or result in fugitive metal dust. PR 1430 requires prompt repairs of total enclosures, which will lower the potential release of fugitive metal particulate dust to the open air. Any breaks, cracks, gaps, or deterioration from any total enclosure that could cause or result in fugitive metal dust shall be repaired within 72 hours of discovery. The Executive Officer may approve a request for an extension beyond the 72 hours if the request is submitted before the 72-hour time limit, and the facility can substantiate that the repair will take longer than 72 hours or equipment, parts, or materials needed for the repair cannot be obtained within 72 hours. If upon inspection the owner or operator discovers a break, crack, gap or deterioration *that results* in fugitive metal dust, the owner or operator shall immediately stop metal grinding and cutting operations. However, the owner or operator may resume operations within the 72-hour repair period if temporary measures are implemented that ensure no fugitive metal dust results from the break, crack, gap or point of deterioration.

To provide further protection to nearby sensitive receptors, PR 1430 will require some facilities to install total enclosure with negative air by venting it to an emission control device that meets the requirements of subdivision (e) no later than 6 months after a Permit to Construct for the emission control device is issued by the Executive Officer. A total enclosure with negative air will be required for a facility if the property line of the facility is located:

- Within 500 feet of the property line of any residence including private homes, condominiums, apartments, and living quarters; daycare centers; health care facilities such as hospitals or retirement and nursing homes; long-term care hospitals, hospices, prisons, and dormitories or similar live-in housing; or
- Within 1,000 feet of the property line of any public or private school, including juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including kindergarten and grades 1 through 12, inclusive; and early head start schools, head start schools, and preschools. This provision does apply to any private school in which education is primarily conducted in private homes.

The distance of 500 feet was selected for "sensitive receptors" (not including types of schools), and is based on the CARB's 2005 "Air Quality and Land Use Handbook: A Community Health Perspective." Modeling and monitoring studies conducted by CARB show that the localized risk of toxic metal particulates such as hexavalent chromium, diminishes significantly at 300 feet. Based on input from the stakeholder working group from community and environmental representatives as well as input from members from the Stationary Source Committee, the distance to sensitive receptors was expanded from 300 to 500 feet. A distance of 500 feet will provide an extra level of health protection. The handbook also considered the varying levels of fugitive emissions from a facility and the toxicity of the metal particulates, and a distance of 1,000 feet is also recommended as a precautionary measure. Thus the distance of 1,000 feet was selected in PR 1430 as the protective distance for schools, and based on input from community and environmental representatives and teachers, preschools, ~~e~~Early Learning and Developmental Programs as defined by the U.S. Department of Education, which includes programs such as Early Head Start and Head Start programs, ~~Head Start, and Head Start programs~~ were added with schools as these early education entities may not be on school grounds.

Under the proposed rule, the in-draft velocity of the total enclosure with negative air shall be continuously maintained at a minimum of 200 feet per minute at any opening including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-ups, no later than 6 months after a Permit to Construct for the emission control device venting the total enclosure is issued by the Executive Officer. The in-draft velocity of 200 fpm was selected based on U.S. EPA Method 204 – Criteria for and Verification of a Permanent or Temporary Enclosure.

Subdivision (e) - Metal Grinding and Cutting Emission Requirements

The owner or operator of a metal forging facility shall vent emissions from all metal grinding and metal cutting operations to an emission control device no later than 6 months after a Permit to Construct for the emission control device is issued by the Executive Officer. The emission control device shall not exceed a PM outlet concentration of 0.002 grains of particulate matter per dry standard cubic foot (gr/dscf). Additionally, PR 1430 requires that the final stage of any emission control device be fitted with HEPA filters or filter media rated by the manufacturer to achieve a minimum of 99.97% control efficiency for 0.3 micron particles, and designed in a manner that does not conflict with requirements or guidelines set forth by the OSHA or CAL-OSHA regarding worker safety, and the National Fire Protection Association (NFPA) regarding safety. SCAQMD staff selected an outlet concentration limit of 0.002 gr/dscf due to the fact that this level has been achieved in practice by a metal forging facility with the type of emission control device that will be required for compliance with PR 1430. SCAQMD staff also determined that control technology representing 99.97% control efficiency for 0.3 micron particles was achievable at metal forging facilities as multiple facilities were observed to have installed HEPA filters to control fugitive metal particulates from metal grinding operations.

PR 1430 allows a facility to alternatively fit the final stage of any emission control device with filter media rated by the manufacturer to achieve a minimum of 98% control efficiency instead of 99.97% control efficiency for 0.3 micron particles. To qualify for the alternative, the facility must not vent billet grinding, swing grinding, torch cutting, or metal cutting to the subject emission control device; only operate a combination of 10 or fewer hand grinding units or stand grinding stations to the subject emission control device; and toxic emissions from the emission control device shall not exceed the screening levels identified in Table I – Toxic Air Contaminants in SCAQMD Rule 1401 – New Source Review of Toxic Air Contaminants, or does not result in a risk of over 1 in a million using the most recent SCAQMD Risk Assessment Procedures for Rule 1401. Billet grinding, metal cutting, swing grinding, and torch cutting typically remove large quantities of metals, and generally have the potential to generate more emissions compared to hand or stand grinding. Therefore, a lower efficiency of 98% is being allowed for the generally lower form of grinding in terms intensity and emissions volume. However, the emissions generated from a significant number of hand grinding or stand grinding units may be equal to or more than the amount of metal being removed from metal grinding or metal cutting methods that remove large quantities of metal. Therefore, the alternative is only applicable to metal grinding operations that have 10 or fewer hand grinding units or stand grinding stations.

All emission control devices are required to be operated at the minimum hood induced capture velocity specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with the SCAQMD. The date of version of the referenced industrial ventilation manual will be included in the facility permit.

To ensure that the emission collection system for an emission control device will effectively capture metal particulate emissions, within 30 days after rule adoption, the owner or operator of a metal forging facility shall provide permanent visual indicators or markings at all hand grinding, stand grinding, swing grinding, and torch cutting stations that identify the maximum distance metal grinding may occur from the emission control device. Metal grinding activity shall be in front of the hood face and within the area identified by the visual indicators or markings. The air flow shall not be obstructed between the metal grinding operation and the hood for the emission collection system.

PR 1430 also requires the removal of any weather cap installed on any stack that is a source of metal particulate emission within 30 days from rule adoption. The facility is allowed under the proposed rule to instead install a butterfly valve in place of the weather cap. SCAQMD staff has concluded that the weather cap allows for the accumulation of metal particulates that can be dispersed at higher concentrations into the air.

Subdivision (f) – Housekeeping Requirements

The following housekeeping requirements are proposed to minimize fugitive metal particulate emissions. All requirements shall be effective within 30 days after the date of rule adoption.

- For metal grinding operations and metal cutting operations, semi-annual wet cleaning or HEPA vacuum of roof tops for total enclosures that house areas associated with metal grinding or cutting operations.
- For metal grinding operations, metal cutting operations, and small part grinding operations, conduct daily wet cleaning or HEPA vacuum of:
  a. areas where metal containing wastes generated from metal grinding or metal cutting operations are stored, disposed of, recovered or recycled;
  b. floors within 20 feet of metal grinding or cutting work station(s);
  c. floors within 20 feet of any entrance/exit point for a temporary enclosure, building, or total enclosure; and
  d. floors within 10 feet of an emission control device dedicated to metal grinding or metal cutting operations.
- The owner or operator of a metal forging facility that conducts metal grinding operations, metal cutting operations, or small part grinding shall also implement the following housekeeping measures:
  a. Monthly wet cleaning or HEPA vacuum of ground surfaces of a temporary enclosure, building, or total enclosure areas where metal grinding or metal cutting operations occur.
  b. Store all materials capable of generating any amount of fugitive metal dust including, but not limited to, metal containing waste generated from the

housekeeping requirements and the maintenance and repair activities (see below), in sealed containers, unless located within a total enclosure

c. Compressed air cleaning or dry sweeping operations shall not be conducted within 30 feet of any metal grinding or metal cutting operation, unless the compressed air cleaning operation or dry sweeping is conducted under an emission control device pursuant to subdivision (e).

Examples of wet cleaning required by the housekeeping provisions above include methods such as wet mopping and wet scrubbing conducted in a manner that does not generate fugitive metal dust.

Subdivision (g) – Maintenance and Repair Activity

As defined in subdivision (c), "maintenance and repair activity" means any of the following activities conducted outside of a total enclosure that generates or has the potential to generate fugitive metal-dust:

a) Maintenance or repair activities on any emission control device that vents metal grinding or cutting operations; or
b) Replacement or removal of any duct section used to vent metal grinding or cutting operations.

It should be noted that PR 1430 does not require maintenance and repair activities to be conducted within any type of enclosure.

No later than 30 days after date of rule adoption, the following measures must be implemented when conducting maintenance and repair activities on any emission control device that vents metal grinding or cutting operations or replacement or removal of any duct section, used to vent metal grinding or cutting operations.

- No later than one hour after completion of any maintenance or repair activity, the owner or operator of a metal forging facility shall wet clean or HEPA vacuum the floors within 20 feet of where the maintenance or repair activity was conducted.
- Any maintenance and repair activity shall be stopped immediately when instantaneous wind speeds are ≥ 20 mph, unless the activity is being conducted within a building or temporary enclosure. Maintenance or repair work may be continued to prevent the release of metal particulate emissions. The wind speed must be determined by a wind speed measuring device, for example, an anemometer that is used by the owner or operator or the Executive Officer.
- Wet clean or HEPA vacuum all metal-contaminated equipment and materials used for any maintenance and repair activity immediately after completion of work in a manner that does not generate fugitive metal dust

Subdivision (h) – Source Tests

PR 1430 will require an annual source test for PM emissions once every 12 months to demonstrate compliance with the particulate emission standard of 0.002 grains per dry cubic foot. If an annual source test demonstrates that PM emissions were no more than 50% of the PM emission standard of 0.002 gr/dscf, the next text for PM emissions from that emission control device may be performed no later than 24 months after the date of the most recent source test.

Source testing for multiple metals, including hexavalent chromium is also required. A source test for multiple metal emissions will be required once every 48 months to be harmonious with the AB2588 quadrennial cycle for evaluating health risk. However, if the facility demonstrates that all baghouse catch samples for metal grinding or metal cutting operations contain total chromium concentrations of 1% or less by weight during the removal or disposal of any baghouse catch as determined by a metals analysis by X-ray fluorescence, the owner or operator is not required to conduct source test for hexavalent chromium emissions once every 48 months.

Proposed Rule 1430 requires facilities to measure the pressure across the HEPA filter. If the monitored pressure across the filter is outside of the acceptable range for a 4-hour time period on 3 or more separate days, or any consecutive 24-hour period, the owner or operator is required to perform the following source tests within 60 days after the continuous data acquisition system indicated the pressure across the HEPA filter was not maintained:

- Source test for PM emissions
- Source test for multi-metal emissions; and
- Source test for hexavalent chromium unless the facility conducts metal analyses that demonstrate all bulk samples from the baghouse catch are no greater than a concentration of 1% by weight for total chromium.

Facilities with an existing, SCAQMD-permitted metal grinding or cutting emission control device in operation before the date of rule adoption shall submit a source test protocol no later than 60 days after the date of rule adoption. Subsequent source test protocols for source tests conducted after the initial source test shall be submitted no later than 90 days prior to the compliance deadline to conduct the next source test. Metal forging facilities with a new or modified metal grinding emission control device with an initial start-up date on or after the date of rule of adoption, shall submit a source test protocol for initial source to demonstrate compliance no later than 30 days after initial start-up. Subsequent source test protocols for source tests conducted after the initial source test shall be submitted no later than 90 days prior to the compliance deadline to conduct the next source test. The initial source test protocol may be used for subsequent source tests if there are no changes.

Source test protocols shall include the source test criteria of the end user and all assumptions, required data, and calculated targets for testing the following:

- Target particulate mass emission standard;
- Preliminary target pollutant analytical data;
- Planned sampling parameters; and
- Information on equipment, logistics, personnel, and other resources necessary for an efficient and coordinated test.

The owner or operator of a metal forging facility shall conduct the source test for an emission control device no later than 60 days from approval of the source test protocol, unless otherwise approved in writing by the Executive Officer. The owner or operator shall notify the Executive Officer in writing 10 calendar days prior to conducting any source test, and notify the Executive Officer within three business days (Monday through Friday) of when the facility knew or should have known of any source test results that exceeds any of the emission standards. Notifications

shall be made to 1-800-CUT-SMOG and followed up in writing to the Executive Officer with the results of the source tests within seven business days of notification.

The Executive Officer may approve a request for an extension of the compliance deadline for source tests to be conducted if the facility can demonstrate that it timely filed a complete source test protocol and associated information, and is unable to meet the deadline due to reasons beyond the facility's control. The request shall be submitted no later than 30 days before the compliance deadline.

The rule lists the following applicable test methods which are required to be conducted representative of typical operating conditions:

- SCAQMD Method 5.1 – *Determination of Particulate Matter Emissions from Stationary Sources Using a Wet Impingement Train*
- SCAQMD Method 5.2 – *Determination of Particulate Matter Emissions from Stationary Sources Using Heated Probe and Filter*
- SCAQMD Method 5.3 – *Determination of Particulate Matter Emissions from Stationary Sources Using an In-Stack Filter*
- CARB Test Method 436 – *Determination of Multiple Metal Emission from Stationary Sources*
- U.S. EPA Method 306 – *Determination of Chromium Emission from Decorative and Hard Chromium Electroplating and Chromium Anodizing Operations – Isokinetic Method*

The use of an alternative or equivalent test method will be allowed, as defined in 40 CFR 60.2, if approved in writing by the Executive Officer, in addition to California Air Resources Board, or the U.S. EPA, as applicable. The reports from source testing conducted shall be submitted to the SCAQMD in 60 days or less after the completion of the test.

Facilities shall use a test laboratory approved under the SCAQMD Laboratory Approval Program (LAP) for the source test methods cited above. Approved labs under LAP can be found on the SCAQMD website. If there is no approved laboratory, then approval of the testing procedures used by the laboratory shall be granted by the Executive Officer on a case-by-case basis based on SCAQMD protocols and procedures.

Subdivision (i) - Monitoring

Proposed Rule 1430 includes parametric monitoring to ensure proper operation of the pollution control devices. Parametric measurements are generally operational parameters of the air pollution control device that indicates the performance and proper operation of the control device. Parametric monitoring is in addition to source testing and provides a good indicator if there is an issue with the pollution control device in between source testing to ensure continued compliance. As discussed below there are monitoring requirements for the baghouse, HEPA filtration, and air flow.

Baghouse Leak Detection System

PR 1430 requires facilities to apply for a permit to install, operate, calibrate, and maintain a Bag Leak Detection System (BLDS) for each baghouse to comply with the emission standards of

subdivision (e) within 60 days of rule adoption for baghouses existing prior to date of rule adoption. The requirements for the BLDS are broader than those found in SCAQMD Rule 1155, because all baghouses subject to PR 1430 will be required to have a BLDS.

Pressure Across the HEPA Filter

The pressure across the HEPA filter of an emission control device shall be continuously measured with a mechanical gauge that is visible and in clear sight of operator or maintenance personnel. Monitoring of the pressure drop across the HEPA filters is an indicator that the filters are not clogged or do not have leaks that may compromise its efficacy. The monitoring device will be required to:

- Be equipped with ports to allow for periodic calibration in accordance with manufacturer's specifications;
- Be calibrated according to manufacturer's specifications at <u>least once</u> ~~a frequency of not less than twice~~ every calendar year;
- Be equipped with a continuous data acquisition system (DAS). The DAS shall record the data output from the monitoring device at a frequency of not less than once every sixty (60) minutes;
- Generate a data file from the computer system interfaced with each DAS each calendar day. The data file shall be saved in electronic Microsoft Excel (xls or xlsx) format other format as approved by the Executive Officer. The file shall contain a table of chronological date and time and the corresponding data output value from the monitoring device in inches of water column. The operator shall prepare a separate data file each day showing the 4-hour <u>rolling</u> average pressure readings recorded by this device each calendar day; and
- Be maintained in accordance with manufacturer's specifications.

During the rulemaking process several community representative commented that the proposed rule needed to include provisions to ensure continuous compliance and triggers were needed to encourage facilities to comply with the proposed rule. As a result, staff added provisions for a continuous data acquisition system to track the pressure across the HEPA filter. In addition, provisions for additional source testing were added to the proposed rule in the event the pressure across the HEPA is continually having issues. The averaging time allow sufficient time for the operator to address the issue, before the trigger for additional source testing is required.

Under Proposed Rule 1430, if the pressure across the HEPA filter is <u>not</u> maintained within ~~-1/2 times to +2 times the inches of water of the value established during the performance test to demonstrate compliance with the emission limitations for~~ the <u>range specified in the Permit to Operate for the</u> emission control device based on hourly <u>or more frequent</u> recordings by the DAS for the averaging periods specified below, the owner or operator shall require additional source testing as discussed in source testing section of this chapter.

- A 4-hour time period on 3 or more separate days over 60 continuous days; or
- Any consecutive 24-hour period.

<u>The acceptable range of pressure across the HEPA filter specified in the Permit to Operate shall be determined by the Executive Officer. The determination shall be based on supporting documentation such as manufacturer specifications and source test results.</u>

Verification of Air Flow to Air Pollution Control Device

The corresponding duct static pressure for the minimum hood induced capture velocity for emission control devices shall be accurately measured once per operating day using the measurement procedures specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Operation and Maintenance,* published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with the SCAQMD, or any more stringent methods required by OSHA or CAL-OSHA.

In addition, for each emission collection system required to be monitored under PR 1430, confirmation of the capture velocity referenced in paragraph (e)(4) and a periodic smoke test shall be conducted at least once every 3 months. The periodic smoke provides a qualitative test for owners and operators to help determine whether cross draft conditions or other operations conducted by the facility are affecting the ability of the emission collection system or hood to effectively capture emissions and verification that the air flow to the pollution control device is moving towards the air pollution control device. Smoke test procedures are outlined in Appendix 1 of the proposed rule.

Subdivision (j) – Recordkeeping

PR 1430 will require records be kept to indicate that the facility is compliant with PR 1430. Required records include:

- Monthly records of weight of metal waste collected by the baghouse catch and if applicable, any metal analyses for bulk samples of baghouse catches showing percent by weight of total chromium;
- Monthly records of weight of metal waste collected by housekeeping activities;
- Dates when bags for baghouses, cartridges, or HEPA filters are replaced;
- Records of periodic smoke tests, emission control device inspection and maintenance, <u>total enclosure inspections,</u> housekeeping activities, maintenance and repair activities, and dates and times when the specific activity was completed.
- Logs of reports to the facility regarding odors or other air quality related issues that includes the date, time, name and contact information for the person reporting the issue, source of the issue, and how the issue was resolved.
- Records for the Bag Leak Detection System
- Records of any odor complaint received identifying:
    - The specific source(s) of the odor within the metal grinding or metal cutting operation;
    - How the facility addressed the source(s) of the odor; and
    - How generation of the odor will be avoided in the future.

All records shall be maintained for at least five years and maintained onsite for at least two years. Records shall be made available to SCAQMD personnel upon request.

Subdivision (k) – Signage

Based on input from the community representatives, the wording of the sign has been modified to reference other air quality issues in addition to odors and to have the SCAQMD listed on the sign before the facility contact. As a result, PR 1430 will require facilities to install a sign that

says, "TO REPORT AIR QUALITY ISSUES SUCH AS ODORS, DUST, OR SMOKE FROM THIS FACILITY, CALL EITHER THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG OR [*FACILITY CONTACT PHONE NUMBER*]." The sign shall be installed within 50 feet of ~~each~~ the main entrance of the facility that is visible to the public, and in a location on each side of the facility that is visible to the public. The sign shall measure at least 16 square feet, and display lettering at least 3 inches tall with text contrasting with the sign background.

The California Metals Coalition had expressed and recommended that only the facility contact be listed on the sign, and that the SCAQMD pursue other mechanisms to educate the public on how to report air quality issues such as through town hall meetings and newspaper notices. The SCAQMD has used signage similar to what is required under Proposed Rule 1430 in Rule 403 for dust, Rule 461 for gasoline dispensing facilities, Rule 410 for material recovery facilities, and Rule 1420.1 for large lead-acid battery recycling facilities.

Subdivision (l) – Permit Application Submittals for Existing Metal Grinding or Cutting Operations

Facilities shall submit complete permit applications no later than 60 days after date of rule adoption for all construction and/or necessary equipment for emission control devices, bag leak detection systems, and total enclosures with negative air required by PR 1430.

Subdivision (m) – Odor Contingency Measures

Proposed Rule 1430 includes contingency measures that an owner or operator of a metal forging facility would be required to implement if they received four confirmed odor complaints within a consecutive six month period. Under the proposed rule, a confirmed odor complaint is an occurrence of odor relating to metal grinding or metal cutting operations resulting in a complaint by different individuals from different households, with the source of the odor having been verified by District personnel as coming from a specific operation subject to the rule. An individual may only be counted as one confirmed odor complaint per day.

The objective of this subdivision is to identify measures that an owner or operator can quickly implement to reduce odors from their metal grinding or cutting operations to be more proactive. Under paragraph (m)(1), the owner or operator would be required to implement one odor reducing measure from the list below after being notified by the Executive Officer that the facility has received four confirmed odor complaints:

- Operational changes to reduce odors including, but not limited to, changing ingress and egress openings that may affect the release of odors from a total enclosure, moving grinding stations further from openings within the total enclosure. Implementation of these types of odor reducing measures will be required 60 days after notification by the Executive Officer;
- Process changes to reduce odors, including but not limited to, use of different materials in the grinding element, and materials applied before, during, or after metal grinding or metal cutting operations. Implementation of these types of odor reducing measures will be required 60 days after notification by the Executive Officer;

- Enhancements to the temporary enclosure, building, or total enclosure to reduce odors escaping the total enclosure, including but not limited, to installation of booths or barriers around grinding stations to contain odors from escaping the total enclosure, upgrade openings used for ingress or egress that will provide even greater control of odors escaping total enclosure. Implementation of these types of odor reducing measures will be required 90 days after notification by the Executive Officer; ~~or~~
- Implementation of any odor reducing measures that requires a new or modified Permit to Construct will be allowed to be completed no later than 6 months after the permit is issued by the Executive Officer; and
- Any other measure or modification, approved by the Executive Officer, that can help to reduce or minimize odors escaping from total enclosure, based on an implementation schedule approved by the Executive Officer.

Within 30 days after completing the implementation of a measure required under paragraph (m)(1), the owner or operator of a metal forging facility shall provide a description of the measure that was implemented and notify the Executive Officer that implementation of the measure has been completed.

Subdivision (n) – Rule 219 Exemption

As noted previously, metal grinding and cutting operations are currently an unregulated source in the Basin and are exempt from requiring written permit under SCAQMD Rule 219. PR 1430 would eliminate this exemption by stating that as of the beginning date of proposed rule adoption, any equipment subject to PR 1430 for metal grinding or cutting operations and associated emission control devices are to no longer be exempt from the requirement of a written permit pursuant to SCAQMD Rule 219. As of this writing, rule development for Proposed Amended Rule 219 has already been initiated by SCAQMD staff to incorporate changes and additions, including those that will provide consistency with PR 1430.

Appendix 1 – Smoke Test to Demonstrate Capture Efficiency for Ventilation Systems of an Emission Control Device

Appendix 1 specifies the requirements for periodic smoke tests to demonstrate capture efficiency for ventilation systems of emission control devices for metal grinding or metal cutting operations pursuant to subdivision (d). The periodic smoke test requirement of PR 1430 will not be required if performing such test presents an unreasonable risk to safety. An example of such unreasonable risk to safety includes having to conduct a smoke test at collection sites that would be extremely dangerous, if not deadly, for somebody to work in that collection zone. Refer to PR 1430 for detailed information on smoke test procedures.

CHAPTER 3: IMPACT ASSESSMENT

AFFECTED SOURCES

Based on site visits conducted by SCAQMD staff, there were 22 metal forging facilities identified to be conducting metal grinding and/or cutting operations onsite. The facilities serve a variety of industries including: aerospace, oil industry, and automotive. The types of metal alloy forged are aluminum, titanium, steel, and varying percentages of alloys. The starting point of the forging process begins with metal billets and ingots. The starting material undergoes multiple steps involving three primary steps of preparation, forging, and finishing operations.

Table 3-1: Metal Forging Facilities Identified to Conduct Metal Grinding or Cutting

Facilities Visited		
Independent Forge Co	Schlosser Forge Facility	Schultz Steel
Carlton Forge Works	Pacific Forge Inc	Weber Metals
Quality Aluminum Forge, LLC	Press Forge Co	Firth Rixson
California Drop Forge	Continental Forge	Ajax Forge
Aluminum Precision Products Inc	California Amforge Corp	Valley Forge Acquisition
American Handforge	Chem Tech Industries	Performance Forged Products
Sierra Alloys Co.	Mattco Forge Inc.	MS Aerospace
Aerocraft Heat Treating Co. Incorporated*		

* Although this facility has forging equipment and conducts grinding onsite, the forging equipment is an ancillary part of its main process (heat treating) and the grinding is conducting as a sampling for quality control purposes. As such, staff is continuing to evaluate whether this facility will be subject to Proposed Rule 1430.

While the identified 22 facilities conduct grinding and/or cutting at their facility, the type and amount vary across the metal forging industry. SCAQMD staff conducted site visits at the 22 facilities and observed a variety of grinding operations paired with a variety of air pollution control technologies.

Table 3-2:
Summary of Number of Facilities with Various Types of Grinding Activities

Findings		Number of Facilities
Grinding		
	Dry Grinding Operations	22
	Wet Grinding Operations	2
Sawing		
	Dry Cutting Operations	2
	Wet Cutting Operations	19
Containment Structures for Grinding		
	Grinding Operations within a Total Enclosure	2
	Grinding Operations within a Partial Enclosure (3 walls)	16
	Grinding Operations Conducted Outside an Enclosure	4

Table 3-3:
Summary of Types of Air Pollution Controls for Various Grinding Activities

Existing Grinding Operations and Air Pollution Controls at Forging Facilities				
Types of Grinding Operation	**Billet**	**Swing**	**Utility**	**Hand**
Total	2	7	9	17
No Control		2	2	9
Vacuum Collection, lubricant, no-baghouse	-	-	2	-
Cyclone	-	-	1	2
Baghouse without HEPA filters	2	4	4	4
Baghouse with HEPA filters	-	1	-	3
Total with Air Pollution Controls	2	5	7	9

EMISSIONS IMPACT

PR 1430 affects 22 metal forging facilities that that conduct metal grinding or cutting operations onsite. Implementation of PR 1430 will reduce both point and fugitive emissions. Quantifying the point source emission reductions is difficult as many sources do not have current source tests and quantifying emission reductions from fugitive sources is difficult. Monitoring data has shown that the implementation of control measures have reduced ambient air concentrations of nickel. The ambient air concentrations of other metal TACs generated from metal grinding and cutting operations will be concurrently reduced as a result of the control measures required under PR 1430.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to California Environmental Quality Act (CEQA) Guidelines §15252 and §15070 ~~(14 CCR §§ 15252, 15070)~~ and SCAQMD Rule 110, the SCAQMD has prepared an Environmental Assessment (EA) for PR 1430. The environmental analysis in the Draft EA concluded that PR 1430 would not generate any significant adverse environmental impacts, and therefore no alternatives or mitigation measures are required. The Draft EA was ~~has been~~ released for a 30-day public review and comment period from January 10, 2017 to February 10, 2017. Three

comment letters were received from the public relative to the Draft EA and responses to the comments have been prepared. The comment letters and the individual responses to the comments have been included in Appendix E of the Final EA. Subsequent to release of the Draft EA, modifications were made to the proposed project. SCAQMD staff has reviewed the modifications to the proposed project and concluded that none of the modifications constitute significant new information or a substantial increase in the severity of an environmental impact, nor provide new information of substantial importance relative to the Draft EA. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5 and §15088.5. Therefore, the Draft EA is now a Final EA and is included as an attachment to the Governing Board package~~Comment letters are being received from the public relative to the Draft EA and responses to the comments will be prepared and included in the Final EA~~. The SCAQMD Governing Board must review the adequacy of the Final EA, including responses to comments, prior to certification of the Final EA and adoption of proposed Rule 1430.

SOCIOECONOMIC ASSESSMENT

~~A socioeconomic analysis will be conducted and released for public review and comment at least 30 days prior to the SCAQMD Governing Board Hearing on PR 1430, which is anticipated to be heard on March 3, 2017.~~The main requirements of the proposed rule that have cost impacts for affected facilities would include the installation of baghouses with HEPA filters (point-source controls on existing and new closures) and the upgrading of an existing building to a total enclosure or construction of a new total enclosure. Some facilities will be required to add negative air vented to pollution controls to the total enclosure, depending on a facility's proximity to certain sensitive land use. The annual compliance costs of PR 1430 are estimated to range from $6.0 million to $6.2 million, depending on the real interest assumed (1%-4%). Press Forge, a metal forging facility in Paramount, would bear the largest share of annual compliance costs (14% or approximately $875 K annually based on a 4% real interest) due to the installation of a total enclosure with negative air that is necessary based on proximity to certain sensitive land use.

The proposed rule is expected to result in approximately 46 jobs foregone annually between 2017 and 2035 when a 4-percent interest rate is assumed (approximately 44 jobs with a 1-percent real interest rate). The projected job impacts represent about 0.001 percent of the total employment in the four-county region. The socioeconomic assessment was made available to the public at least 30 days prior the Public Hearing and is included as part of the Public Hearing Package.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

Requirements to Make Findings

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report.

Necessity

PR 1430 is needed to further protect public health by reducing ~~toxic,~~metal particulate matter emissions, some of which are toxic, and odors from dry metal grinding and cutting operations at metal forging facilities. Metal grinding and cutting operations are currently exempt from SCAQMD permits and are an unregulated source. The general action of metal grinding and cutting is prone to generate fugitive metal particulate, which contains some level of toxic metals, particularly if the grinding or cutting operation is not properly controlled. Proposed Rule 1430 is needed to reduce metal particulate emissions from metal grinding and metal cutting operations at forging facilities to ensure that these operations have the appropriate pollution control equipment, are conducted within an enclosure to ensure fugitive emissions that do not make it to the control device are contained, and to ensure basic housekeeping requirements are followed so that any accumulation of metal particulate around grinding operations is not re-entrained into the air or tracked outside of the facility.

Authority

The SCAQMD Governing Board has authority to adopt PR 1430 pursuant to the California Health and Safety Code Sections seq., 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, and 41700.

Clarity

PR 1430 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

Consistency

PR 1430 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

Non-Duplication

PR 1430 will not impose the same requirements as any existing state or federal regulations. The proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD.

Reference

By adopting PR 1430, the SCAQMD Governing Board will be implementing, interpreting or making specific the provisions of the California Health and Safety Code Section 41700 (nuisance), and Federal Clean Air Act Section 112 (Hazardous Air Pollutants) and Section 116 (Retention of State authority).

COMPARATIVE ANALYSIS

Health and Safety Code section 40727.2 requires a comparative analysis of the proposed rule with any Federal or District rules and regulations applicable to the same source. See Table 3-1 below.

Table 3-4: Comparison of PR 1430 with NESHAP for Area Source Standards for Nine Metal Fabrication and Finishing Source Categories

Rule Element	PR 1430	NESHAP from Area Source Standards for Nine Metal Fabrication and Finishing Source Categories
Applicability	Facilities who own or operate a metal forging facility where metal grinding or metal cutting operations are conducted onsite	Nine metal fabrication and finishing source categories, including iron and steel forging facilities
Outdoor Metal Grinding	Prohibition of metal grinding in the open air	- None
Total Enclosures	- Conduct all metal grinding or metal cutting operations within a total enclosure that for containment and minimization of fugitive emissions - Inspect total enclosures once a month - Implement total enclosures with negative air if metal grinding operations are located within 500 feet of sensitive receptor or 1,000 feet of a pre-school, pre-Head Start, Head Start, or school	- None
Metal Grinding and Cutting Emissions	- Vent metal grinding and metal cutting emissions to an emission control device meeting 0.002 grains/dscf - Emission control devices shall be equipped with filters that achieve a 99.97% control efficiency on 0.3 micron size particles; alternatively equip with filters that meet 98% control based on lower volume grinding operations - Requirements for design and operation per *Industrial Ventilation Manual* - Inspect, operate, and maintain each emission control device pursuant to manufacturer specification	- Capture PM emissions from dry grinding and dry polishing and vent the exhaust to a cartridge, fabric, or HEPA filter - Does not include hand-held or bench-scale devices
Housekeeping Requirements	- Semi-annual cleanings of total enclosure roof tops - Daily wet cleaning or HEPA vacuum of areas subject to metal grinding or metal cutting dust - Monthly cleanings of floors of enclosures where metal grinding or metal cutting occurs - Store fugitive metal dust material in containers	- Minimize excess dust in the surrounding areas to reduce metal fugitive hazardous air particulates
Maintenance and Repair Activity Requirements	- Wet mop or vacuum the floors within 20 feet of where maintenance or repair activity was conducted within one hour after completion - Cease maintenance and repair activity if winds $\geq$ 20 mph - Clean by wet wash or vacuum all metal-contaminated equipment immediately after	- Operate equipment according to manufacturer's specification

Rule Element	PR 1430	NESHAP from Area Source Standards for Nine Metal Fabrication and Finishing Source Categories
	completion	
Source Test	- Annual requirement to source test emission control devices for PM - Option to source test once every 24 months with a source test of 50% or less of PM emission standard - Source test once every 48 months for multiple metals and hexavalent chromium unless total chromium is <1% for each baghouse change out - Provisions for additional source testing if outside of acceptable operating pressure for HEPA filtration - Submit source test protocol and notify the SCAQMD in a timely manner - Conduct source test within 60 days source test protocol approval	- None
Monitoring	- Install, operate, inspect, and maintain a BLDS system pursuant to SCAQMD Rule 1155 - Minimum hood induced capture velocity shall be measured by static pressure once per operating dayshift - Continuously monitor the pressure across an add-on air pollution control device to ensure the press drop is within ~~-1/2 times to +2 times the inches of water of the value established during the performance test~~the range specified in the permit for the emission control device - Periodic smoke test of each emission collection device once every 3 months	- None
Recordkeeping	- Monthly records of metal waste generated from baghouse catch, percent total chromium, and metal waste generated from housekeeping - Dates when bags for baghouses or HEPA filters are replaced - Logs of report to the facility regarding odor or other air quality related issues, including confirmed odor complaints - Maintain smoke test results, emission control device inspection and maintenance, housekeeping activities, and maintenance and repair activities - Maintain BLDS records	- None
Signage	- Install signage that lists contact information in the event of air quality issues including odors, smoke, or dust	- None
Odor Contingency Measures	- Implement odor contingency measures of the proposed rule if the owner or operator	- None

Rule Element	PR 1430	NESHAP from Area Source Standards for Nine Metal Fabrication and Finishing Source Categories
	receives four confirmed odor complaints relating to the metal grinding or metal cutting operation within a consecutive 6 months	

REFERENCES

REFERENCES

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APPENDIX A: RESPONSE TO COMMENTS

Comment Letter #1
Press Forge Co.
December 5, 2016

PRESS FORGE CO.

7700 JACKSON STREET • PARAMOUNT, CALIFORNIA 90723
Phone: (562) 531-4962 • Fax: (562) 531-4826

December 5, 2016

Ms. Susan Nakamura (SNakamura@aqmd.gov)
Acting Assistant Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4182

SUBJECT: Control of Fugitive Dust Emissions

Dear Ms. Nakamura:

I am the General Manager of the Press Forge facility located in Paramount, CA. South Coast Air Quality Management District is currently developing a proposed Rule 1430 to control metal dust emissions from grinding operations at forging facilities. At your December 1, 2016 meeting about the rulemaking effort, Press Forge was identified as a facility that was conducting grinding outdoors. I wanted to correct the record and make sure that you are aware that Press Forge ceased all outdoor grinding on or before November 10th. While the majority of our grinding has occurred indoors for as long as I have worked at the facility, there was some small hand grinding conducted outside up until that time. That is no longer the case. Now all grinding is conducted indoors with emissions controlled by baghouses and the outdoor hand grinding stations have been permanently removed. 1-1

I also wanted to ensure that you were aware of all the other improvements at the facility to reduce emissions related to our grinding operations. Press Forge is in the process of constructing a new building that will enable us to conduct all hand grinding operations within an enclosed space under negative pressure and certified as a total enclosure. Exhaust from the new hand grinding facility will be routed to baghouses with HEPA secondary filtration. This structure is being built with careful attention to your draft rule language to ensure that we meet or exceed all of the anticipated requirements. We expect the new hand grinding facility to be fully operational by late spring of 2017--well in advance of when the rule could require such upgrades. In the interim, in order to minimize the potential for fugitive dust, we are in the process of implementing the following additional procedures: 1-2

- Prohibiting use of compressed air for cleaning purposes as indicated in Rule 1430
- Prohibiting use of dry sweeping for cleanup as indicated in Rule 1430
- Purchasing additional HEPA vacuums to replace broom sweeping and facilitate housekeeping as indicated in Rule 1430
- Utilization of a mobile wet sweeper in place of the existing mobile dry sweeper
- Limiting deaning of areas potentially impacted by metal dust to wet methods or HEPA vacuum
- Implementing enhanced maintenance procedures using the HEPA vacuums and wet cleanup to minimize the suspension of dust as well as trackout
- Training our workers on the importance of minimizing fugitive dust emissions

PRESS FORGE CO.

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We believe that our process of constant improvement is resulting in positive change and that we are successfully decreasing fugitive dust emissions from our facility. } 1-3

Please let me know if you have any questions.

Sincerely,

Robert Ortiz

cc: Kyle Nelson
Tom Wood

1-1 **Response:** Thank you for your correspondence. On December 9, 2016, SCAQMD rules staff visited Press Forge Co. and was pleased to see that the hand grinding operation was being conducted in a temporary enclosure with a temporary baghouse.

1-2 **Response:** During the SCAQMD's visit to Press Forge Co. on December 9, 2016, representatives from Press Forge Co. shared with SCAQMD staff the other improvements that were underway including grading for a new total enclosure to house their grinding operation and HEPA vacuum. The SCAQMD staff encourages Press Forge Co. to continue working towards the many air quality improvements.

1-3 **Response:** SCAQMD staff agrees that the process of constant improvement is resulting in positive change and will help to reduce fugitive metal particulate.

Comment Letter #2
Independent Lubricant Manufacturers Association
December 9, 2016

Independent Lubricant Manufacturers Association

400 North Columbus Street, Suite 201
Alexandria, VA 22314
p 703.684.5574
f 703.836.8503
www.ilma.org
ilma@ilma.org

December 9, 2016

Via Electronic Mail (SNakamura@aqmd.gov)

Ms. Susan Nakamura
Acting Assistant Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4182

Re: Proposed Rule 1430 – Control of Emissions from Grinding Operations at Metal Forging Facilities

Dear Ms. Nakamura:

The Independent Lubricant Manufacturers Association ("ILMA" or "Association") submits these comments on the South Coast Air Quality Management District's ("SCAQMD") pre-rulemaking draft Proposed Rule 1430 - Control of Emissions from Grinding Operations at Metal Forging Facilities. ILMA has participated in the stakeholder meetings on Proposed Rule 1430 and respectfully requests that its suggested modification below be incorporated into the draft rule eventually proposed for public comment.

Introduction to ILMA

ILMA is national trade association with 355 member companies. As a group, ILMA members blend, compound, and sell over 25 percent of the United States' lubricant needs (*e.g.*, passenger car motor oils) and nearly 80 percent of the metalworking fluids ("MWFs") utilized in the country. 2-1

Independent lubricant manufacturers by definition are neither owned nor controlled by companies that explore for or refine crude oil to produce lubricant base stocks or that produce chemical additives. Base oils are purchased from refiners, who also are competitors in the sale of finished products. Additives are purchased from suppliers, who also may be competitors in the sale of finished products. ILMA members succeed by processing, producing, and distributing high-quality, often specialized, lubricants.

Section (b) – Applicability – Should be More Precisely Defined

Section (b) - Applicability states that "[t]his rule applies to all persons who own or operate a metal forging facility where dry metal grinding or metal cutting operations are conducted. This rule does not apply to metal grinding or metal cutting conducted under a continuous flood of metal removal fluid." 2-2

ILMA requests that SCAQMD add the following to this section:

> A continuous flood of metal removal fluid is defined as direct application of fluid to the tool or work piece interface at a rate that is sufficient to adequately suppress metal dust emissions. Minimum Quantity Lubrication (MQL) is not considered a continuous flood of metal removal fluid since the rate of application is insufficient to suppress metal dust emissions.

2-2 cont

Definitions

Additional definitions for "Minimum Quantity Lubrication" and "flood cooling" are needed to improve Proposed Rule. The Association is developing recommended definitions for these terms and will supplement this submission.

2-3

* * * * *

ILMA urges SCAQMD to adopt the modification to the applicability section set forth above.

Sincerely,

Holly Alfano
Chief Executive Officer

CC: ILMA's Metalworking Fluids Committee
Jeffrey L. Leiter, Esq.
Daniel T. Bryant, Esq.

2-1 Response: The SCAQMD appreciates ILMA's participation in the rulemaking process.

2-2 Response: Thank you for your comment. The definition of "metal removal fluid" was revised to state that "metal removal fluid excludes Minimum Quantity Lubrication techniques that coat the tool work piece interface with a thin film of lubricant and minimize heat buildup through friction reduction. Minimum Quantity Lubrication fluids are applied by pre-coating the tool in the lubricant or by direct application at the tool work piece interface with a fine mist."

2-3 Response: The SCAQMD staff looks forward to receiving the additional suggestions.

Comment Letter #3
Solutions 4 Blast
December 10, 2016

Solutions 4 Blast
aka Air Cleaning Systems
aka Solutions 4 Industry, Inc.
3633 Pomona Boulevard
Pomona, CA 91768

December 10, 2016

Ms. Susan Nakamura
Acting Assistant Deputy Executive Director
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182

RE: Stakeholder Comments About Proposed Rule 1430

Ms. Nakamura,

I would like to take a moment to comment on proposed Rule 1430. While our company is not directly affected by any rules generated by SCAQMD, we are still impacted. The long term effect of any onerous regulation is a loss of manufacturing companies that cannot afford to upgrade or are tired of the continuous barrage of regulations. This may happen via closure or moving the manufacturing to another state or country. This causes a loss of good paying jobs and affects companies such as ours whose client base is the manufacturers in our region. (It is a fact that previous rules enacted by SCAQMD have caused manufacturers to close or move their operations to other states or countries.) Thus, it is important for a rule to be carefully crafted and the financial impact (to the business and region) carefully considered (because money to pay for upgrades and good paying jobs don't grow on trees).

I became aware of this proposed rule less than two months ago. My immediate gut reaction was two-fold. First, I said this could be good for our business because we sell a lot of the pollution control equipment needed to implement this rule. However, my second reaction was disconcerting… the long term impact of this rule will likely be the loss of more forgers in Southern California. Furthermore, if SCAQMD goes after forgers with this rule, it won't be long before they impose this same rule on other metal working industries which means the loss of more of our client base. 3-1

Now, I'm not so naïve as to believe that this letter could possibly make SCAQMD reconsider the implementation of this rule. That would fly in the face of all things bureaucratic. However, I am hoping that I can address a few issues with the rule that I see (as an expert in most things related to dust collection, a person with heavy experience in manufacturing and a concerned business owner) and SCAQMD will consider postponing the implementation of the rule while appropriate investigation and/or studies are performed and these issues are addressed:

Page 3, Paragraph (d)(2)
STATEMENT: …. shall continue conducting all metal grinding operations in the enclosure until the total enclosure and cross-draft requirements specified in paragraph (d)(3) are met.
ISSUE: No cross-draft requirements are specified in paragraph (d)(3). 3-2

Page 5, Paragraph (e)(2)

STATEMENT: The final stage of any emission control device required under paragraph (e)(1) shall be fitted with HEPA filters, or filter media rated by the manufacturer to achieve a minimum of 99.97% efficiency for 0.3 microns.

ISSUES:

1. What determination was used to justify the use of HEPA filtration? While it can easily be argued that HEPA filtration should be used in conjunction with processes that generate particulate from toxic materials, there is no basis for requiring HEPA filtration for the grinding of all metals. In general, the size of grinding dust particulate is considered medium (> 1 micron) to large (> 5 micron), however, the size of grinding dust particulate can vary depending on the following factors:
   a. Speed of grinding wheel or disk
   b. Diameter of grinding wheel or disk
   c. Grade of grinding wheel or disk
   d. Pressure that the operator or machine is placing on the metal substrate with the grinding wheel or disk.

   It is irresponsible to assume that all metals will require HEPA filtration without relevant studies to indicate that a significant particle distribution of the dust falls in the 0.3 micron (or less) range for each type of grinding operation.

   The financial ramification on ANY business is onerous. Retrofitting dust collectors with HEPA filtration is very expensive financially (not inclusive of the space required for the HEPA filtration module). On average, the cost per 1000 cfm of dust collector blower will exceed $500 on a large, stationary dust collector; the cost is far greater for small dust collection systems such as self-contained downdraft tables. Therefore, as an example, a facility that is operating dust collection with cumulative air volume of 50,000 cfm would spend $25,000 or more to upgrade their dust collectors. The cost for maintaining HEPA filtration can even be worse. Facilities that are still using "baghouse" dust collectors may have to change their HEPA filters 4-6 times per year due to the inherent inefficiencies of baghouse dust collectors. Using the same example, a facility with 50,000 cfm of baghouse dust collection would spend approximately $6,250 per filter change (or $25,000 - $37,500 annually) in HEPA filters. As I mentioned earlier, money doesn't grow on trees.

2. NFPA Standard 484 does not allow HEPA filtration on dust collectors that are used for the collection of combustible metal dusts if the dust collector is located inside a building. In many cases, depending on the operation and the dust collection equipment, it is not possible to locate the dust collector outside the building. While NFPA Standards are not legally enforceable, the insurance industry is forcing many businesses to follow the standards to mitigate potential insurance liability. This leads to a conundrum for the facility:
   a. Do they follow SCAQMD Rule 1430 and risk losing their insurance?
   b. OR, do they obey their insurance company and get fined by SCAQMD for non-compliance?

3-3

Page 6, Paragraph (f)(2), (3), (g)(1), (g)(3)

STATEMENT (f)(2): Daily wet cleaning or HEPA vacuum of the following:
(f)(3): Monthly wet cleaning or HEPA vacuum of ground surfaces....
(g)(1): No later than one hour.... facility shall wet clean or HEPA vacuum...
(g)(3): Wet clean or HEPA vacuum all metal-contaminated...

ISSUES:

1. Wet cleaning of combustible metal dust is not advised because the collected wet fines generate hydrogen (a highly combustible gas).

3-4

2. What is the point of HEPA vacuuming of non-toxic metals unless it has been proven that a significant volume of grinding or sawing dust is less than 0.5 micron? [Refer to discussion of Page 5, Paragraph (e)(2)] 3-4 cont

Page 7, Paragraph (f)(4)

STATEMENT: Store all materials ……. Including, but not limited to, metal containing waste generated from housekeeping requirements….. in sealed containers, unless located within a total enclosure.
ISSUE: There is an inherent issue with storing combustible dust (aluminum, titanium, magnesium, mixed metals, etc.) in a sealed container; especially if the dust is wet. This practice inadvertently creates a bomb with potential for severe injury and property damage. 3-5

Page 7, Paragraph (f)(5)

STATEMENT: Compressed air cleaning operations shall not be conducted within 30 feet of any metal cutting or metal grinding operation.
ISSUE: There is no logical basis for this rule unless it is more clearly defined. A person who is using a blow-off gun that consumes 10 cfm of compressed air 5 feet from a grinding or metal cutting will affect the air flow less than the wind blowing in from an open doorway. However, someone using an 1" diameter open air hose (flowing 100 cfm @ 80 psi) thirty feet from the processes will likely cause air turbulence. 3-6

Page 7, Paragraph (g)(2)

STATEMENT: Any maintenance and repair activity shall be stopped immediately…. Unless activity is being conducted within an enclosure, temporary enclosure, or total enclosure.
ISSUE: It is very easy for engineers, consultants and bureaucrats to design, recommend and create regulations that have no practicality in real world applications. Allow me to offer up an example (no matter how ludicrous it may seem, it is a real possibility and shows the impracticability of this paragraph):

- Facility has a dust collector that provides dust control for a dozen grinders.
- Santa Ana winds are blowing at 25 mph with gusts up to 40 mph.
- A metal fatigue breach occurs between the clean air and dirty air side of the dust collector but accessible from the outside of the dust collector. The metal fatigue breach is only two inches long, but the breach 15 feet above ground level. Every time the reverse pulse filter cleaning system pulses, a puff of dust escapes from the dust collector.

According to proposed Rule 1430, the facility needs to install a temporary enclosure around the breach so that maintenance can grind the paint off around the breach to facilitate a weld, then grind the weld so that the metal can be prepped for coating (to protect against corrosion). Building a temporary enclosure 15 feet off the ground that is "free of breaks, cracks, or gaps" will take at least four hours to facilitate a repair that will likely require less than two minutes of grinding. Meanwhile, production is shut down for four hours. This is the definition of impracticability and a clear cut example of why regulations are stifling business in California. It seems to me that there needs to be an exclusion that allows maintenance and repair activities that require less than ten total minutes of grinding to not require a temporary enclosure. 3-7

Page 10, Paragraph (i)(2)

STATEMENT: The minimum hood induced capture velocity specified in paragraph (e)(3) shall be accurately measured by static pressure once per operating shift…
ISSUE: This paragraph of the rule is ludicrous at best and punishing at worst. First, it is possible for a facility to have dozens of hoods and operate three shifts per day. It may require a facility to have one full time staffer assigned to handling the testing and the documentation required by this rule. This could easily cost a large facility more than $150,000 annually. (Remember that money doesn't grow on trees.) 3-8

Additionally, the hood velocity will vary depending on the static pressure on the entire system. Therefore, as the filters get dirty, there will be a change in velocity at the hood. It is an impossible task for a facility to maintain a uniform hood velocity. An easier, more practical and more cost effective approach would be to require a facility to achieve the desired hood velocity with clean filters in the dust collector in order to complete the permit application. The static pressure of the filters is notated. Once the static pressure across the filters has increased to specific point (typically +2" for cartridge filters), the filters must be changed. If the District wants to have the facility test the hood velocity prior to changing the filters so a baseline hood velocity (with dirty filters) can be established, that would be acceptable. Beyond this, testing hood velocity annually should be sufficient. 3-8 cont

Page 10, Paragraph (i)(3)

STATEMENT: The pressure drop across the HEPA filter within -1/2 times to +2 times the inches of water of the value established during the performance test….

ISSUE: You cannot have a negative value unless there is a breach (which negates the use of a HEPA filter) and a positive value above +1 indicates that the HEPA filters are overloaded. 3-9

Page 11, Paragraph (i)(4)

STATEMENT: For each emission collection system subject to this subdivision, a periodic smoke test shall be conducted, unless performing such test presents an unreasonable risk to safety, at least once every three months…

ISSUES:

1. What is the point of the smoke test? This needs to be clarified.
2. What is the justification that this test needs to be performed every three months? This presents additional unnecessary time, documentation and money to the facility owner.

3-10

Page 11, Paragraph (k)(1)

STATEMENTS:

1. Installed within 50 feet of entrance of facility…
2. Measures at least 16 square feet…
3. Displays lettering at least 3 inches tall…

ISSUE: Has SCAQMD given consideration that these parameters may not meet with local signage code? Which "bureaucracy" takes precedence? 3-11

ADDITIONAL ISSUES:

1. Why are exclusions not included in the proposed rule? How is a facility owner, concerned business or concerned citizen supposed to know the full extent of the rule if the exclusions are not included? I think that the proposed rule needs to be reissued with exclusions included and a reasonable amount of time allocated for comments and questions of the complete proposed rule.
2. In creating a rule, SCAQMD does not necessarily apply science in creating the rule. For example, it was arbitrarily determined that all dust collection in Rule 1430 must have HEPA filtration, yet there is no justification for it given that many facilities are not working with toxic metals and there is no particle size distribution testing done to indicate that much if any of the grinding dust generated is finer than 0.5 micron (a standard for most cartridge filters).
3. In creating a rule, SCAQMD does not take adequate consideration of the following:
    a. Financial impact on the business that must comply with the rule
        i. Capital equipment and building expenditures
        ii. Implementation, operation, monitoring and record keeping labor costs
        iii. Annual maintenance costs
        iv. Ability to be able to compete with competitors in other states

3-12

b. Rule conflicts with local codes (building, signs, etc.)
c. Rule conflicts with other regulations or standards
   i. Cal-OSHA
   ii. OSHA
   iii. NFPA

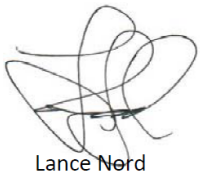
3-12 cont

Ms. Nakamura… I can appreciate the desire for SCAQMD to provide a service to the region by improving the air quality. However, it is incumbent upon your organization to provide concise rules that do not adversely affect business to the extent that they cannot financially compete in the market place thereby shutting down or leaving the state. When this happens, our air might be cleaner, but there are fewer working people able to enjoy this clean air. We do not need new rules for the sake of justifying a bureaucracy and the rules need to be tempered with the clarity of financial impact on the individual businesses and industry as a whole.

3-13

I would appreciate it if you would add me to your mailing list (lnord@solutions4blast.com). Please don't hesitate to contact me if you have any questions or comments.

Respectfully,



Lance Nord
President

3-1 Response: As SCAQMD staff started the rule making process for Proposed Rule 1430, it became very apparent that the metal grinding operations at metal forging facilities can be a very intense operation with billet grinders, swing grinders, and multiple hand grinders. These grinding activities are currently unregulated. As a result, when the rulemaking began there were four metal forging facilities that were conducting their grinding operations in the open air with no pollution controls. Although some facilities did have pollution controls, there are no permit conditions to ensure that the pollution controls are adequately sized, has the proper ventilation, or any source testing or other monitoring to ensure proper operation and maintenance. Unfortunately, the community that surrounds these facilities are impacted from fugitive metal particulate emissions from these sources.

The SCAQMD staff is always sensitive to the cost of compliance. The average annual cost is estimated to be about $345,000. Larger facilities will experience higher costs. The SCAQMD staff has prepared a socioeconomic analysis for Proposed Rule 1430.

3-2 Response: The proposed rule has been modified to remove the reference to "cross-draft." Paragraph (d)(2) requires that "…all metal grinding or cutting operations in the building until all the requirements specified in paragraph (d)(3) are met. Paragraph (d)(3) has specific requirements for the total enclosure.

3-3 Response: SCAQMD staff has completed a socioeconomic analysis for Proposed Rule 1430 that determined the capital investment cost for an emissions control system with a cumulative air volume of 50,000 CFM and HEPA filtration would be approximately $540,000 with an additional annual operating cost for HEPA filtration of approximately $78,000. This value exceeds the commenter's estimated compliance cost for HEPA and has been accounted for in the socioeconomic analysis conducted to assess the cost impacts of Proposed Rule 1430.

Based on discussions with another pollution control provider, HEPA filters with a baghouse can be safely designed. To ensure there is no conflict with SCAQMD's proposed rule and the National Fire Protection Association, Proposed Rule 1430, paragraph (e)(2) has been modified and states that, "The final stage of any emission control device required under paragraph (e)(1) shall be fitted with HEPA filters, or filter media rated by the manufacturer to achieve a minimum of 99.97% control efficiency for 0.3 micron particles, and designed in a manner that does not conflict with requirements or guidelines set forth by the OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety."

3-4 Response: Housekeeping provisions are an effective tool to ensure that fugitive dust is not tracked or is not re-entrained where it can impact off-site neighbors. As discussed in Chapter 1, ambient air monitors and glass plate samples have shown the presence of a variety of metal particulates, some of which are toxic such as nickel, cadmium, and arsenic. The SCAQMD staff believes that the housekeeping measures are needed to minimize fugitive dust.

3-5 Response: Proposed Rule 1430 does not require that the metal containing waste be stored in a sealed container. Under Proposed Rule 1430, the operator can either store metal containing waste generated from housekeeping in a sealed container or in any container, provided the container is within a total enclosure.

3-6 Response: The overall objective of this provision is to minimize the opportunity for fugitive dust to become airborne. Under Proposed Rule 1430, compressed air is allowed if the compressed air cleaning operation or dry sweeping is conducted under an emission control device.

3-7 Response: Proposed Rule 1430 does not require an operator to install a temporary enclosure to conduct maintenance and repair activities. The proposed rule does specify that if certain maintenance and repair activities on the pollution control devices are being conducted outside of an enclosure, that specific housekeeping provisions must be implemented.

3-8 Response: Measuring the static pressure is a quick measurement. Staff has modified this provision to requirement to require that the static pressure be measured once per day, instead of once per shift.

3-9 Response: The point of measuring the pressure drop across the HEPA filter is to identify a breach or if the HEPA filter is overloaded.

3-10 Response: The SCAQMD staff has found that smoke tests are an inexpensive tool to ensure that the air flow is appropriately moving towards the pollution control device. Use of smoke tests has been required under other metal working rules such as Rule 1469 for metal plating facilities, and Rules 1420.1 and 1420.2 for large lead acid-battery recyclers and lead melting facilities.

3-11 Response: SCAQMD has required similar signage requirements in other rules such as Rule 410 for material recovery facilities, Rule 403 for dust, and Rule 461 for gasoline dispensing facilities. Signage requirements were added in Proposed Rule 1430 based on input SCAQMD staff had received at a public meeting were community members commented that they do not know who to call if there is an air quality issue. Subdivision (k) allows the owner or operator to submit a written request for alternatives to signage requirements for the Executive Officer's approval.

3-12 Response: Proposed Rule 1430 incorporates specific exclusions in the applicability and in key definitions. For example the definition of hand grinding excludes grinders with a disc size 1 inch or less, and the definition of metal grinding operation excludes hand grinding that is for quality control or quality assurance to remove small imperfections on metal parts.

Proposed Rule 1430 does not require all sources to have HEPA filtration. Under paragraph (e)(3), if a facility can meet specific criteria such as the number and type of grinding and the toxic screening emissions for permitting, the facility may alternatively fit the final station of any emission control device with a filter media rated by the manufacturer to achieve a minimum of 98% control efficiency.

Regarding cost impacts, please refer to the Draft Socioeconomic Impact Report for Proposed Rule 1430. Cost impacts take into consideration capital equipment, construction of total enclosures, and operation and maintenance costs.

Proposed Rule 1430 includes provisions to ensure installation of pollution controls are not in conflict with OSHA or NFPA requirements.

3-13 Response: Facilities that are currently grinding in the open air with no pollution controls will have higher costs to build a total enclosure and install pollution controls. Implementation of Proposed Rule 1430 will reduce the release of metal particulate, of which some is toxic, from grinding operations. Proposed Rule 1430 is an important rule that is needed to reduce metal particulate emissions from metal grinding and cutting operations at metal forging facilities.

Comment Letter #4
Weber Metals
December 13, 2016

WEBER METALS
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13 December 2016

Ms. Susan Nakamura
Acting Assistant Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Attention: Mr. Dan Garcia

Re: Comments on Proposed Rule 1430, Control of Emissions from Grinding Operations at Metal Forging Facilities

Dear Ms. Nakamura:

Weber Metals, Inc. produces aluminum and titanium forgings for the aerospace, defense and commercial airline industries. Based in Paramount, we supply our customers with quality forged products that consistently meet or exceed all applicable customer and regulatory requirements, industry standards, and contractual specifications. We achieve this objective by continually improving our internal process controls and the effectiveness of our Quality Management System through clear understanding of the individual responsibilities and an ongoing self-assessment.

Weber Metals is committed operating in an environmentally responsible manner and with the development of our 60,000-ton press project we are modernizing key aspects of our facility to meet best available standards. We support the South Coast Air Quality Management District's ("District") development of Proposed Rule 1430, Control of Emissions from Grinding Operations at Metal Forging Facilities (PR1430). Weber Metals would be impacted by this rule, and we support a rule design that provides affected facilities a clear and achievable pathway to compliance since the operations covered by the rule have historically been exempt from District regulation under Rule 219. To that end, we respectfully offer the following comments on the 1st draft version of PR1430 which was released on 30 November 2016. 4-1

1. **The rule should not apply to low volume activities with very low emissions. Where such operations can be shown to have trivial emissions, they should be excluded from PR1430.**

The stated purpose of this rule is to reduce toxic and particulate matter emissions from dry metal grinding and metal cutting operations at metal forging facilities. But as currently drafted, PR1430 does not differentiate larger volume operations which would reasonably be expected to have meaningful emissions from low volume (or intermittent) operations that are likely insignificant in terms of emissions. Including these low volume operations in the rule could result in excessive compliance costs for new emissions controls and testing requirements for emissions which may be insignificant in health terms. 4-2

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We recommend that the District develop a low volume/low use exemption for PR1430, or develop a process in the rule by which facilities can off-ramp by providing a case-by-case, health-based justification for exclusion for certain operations. 4-2 cont

2. PR1430 should prioritize the control of emissions from metal grinding operation. The District should reconsider the emissions potential associated with metal cutting operations before subjecting them to the same standard as metal grinding operations. The requirements of Section (e) should be revised.

As currently drafted, PR1430 would require all metal cutting operations to be controlled in an equivalent manner to metal grinding operations. Based on our many decades of experience, metal grinding operations should be the primary focus for new (or modified) emissions controls and source tests. Conversely, metal cutting operations have a significantly lower potential for emissions. In particular, band saw cutting generates metal chips but these are of such large dimensions (i.e., greater than 1 mm) that they fall to the ground immediately and are swept up or collected in a chip collection system. 4-3

We recommend the following changes to PR1430 Section (d) and (e): 4-3 cont

(d) Total Enclosures

(1) An owner or operator of a metal forging facility is prohibited from conducting any metal grinding ~~and metal cutting~~ operations outside of a temporary enclosure, enclosure, or total enclosure.

(e) Metal Grinding Emission Requirements

(1) No later than [one year from Date of Rule Adoption], the owner or operator of a metal forging facility shall vent emissions from all metal grinding ~~and metal cutting~~ operations to an emission control device that does not exceed a PM outlet concentration of 0.01 grains of particulate matter per dry standard cubic foot as determined by the most recent District-approved source test conducted on behalf of the facility or the District pursuant to subdivision (h).

…

(3) The owner or operator of a metal forging facility may alternatively fit the final stage of any emission control device required under paragraph (e)(1) with filter media rated by the manufacturer to achieve a minimum of 98% control efficiency for 0.3 micron particles if the owner or operator:

(A) does not conduct billet grinding~~,~~ or swing grinding;~~, torch cutting, or metal cutting;~~

3. The one-size-fits-all proposed standards for metal cutting operations are not practically achievable. We recommend revisions of the definition of metal cutting in Section (c)(15).

As noted, band saw cutting generates metal chips but these are of such large dimensions (i.e., greater than 1 mm) that they fall to the ground immediately and are swept up or collect in a chip collection 4-4

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system. And some metal cutting conducted at forging facilities involves extremely hot ingots. This is typically done near a press, in the middle of the forging process. Such "hot" cutting cannot be safely performed within a total enclosure and also cannot be safely vented to a baghouse. For these reasons, we recommend revisions of the "Metal Cutting" definition to: (a) differentiate abrasive cutting from band saw cutting since metal cutting with a band saw does not generate smoke or particulates; and (b) to exclude hot cutting from the definition. We recommend the following changes to PR1430 Section (c)(15): 4-4 cont

(c)(15) METAL CUTTING means for the purposes of this rule a process used to abrasively cut starting ingot or billet stock to length in preparation for the forging process and also to trim forged parts to size without the use of a metal removal fluid. Vertical band saw cutting and hot cutting are not considered metal cutting for purposes of this rule.

4. Hand Grinding should be limited to those grinders involving discs greater than 3" in diameter. We recommend revisions of the definition of metal cutting in Section (c)(15)

Discs greater than 1" are used by autobody shops, weld shops, construction, homeowners, and many others not included in this regulation. We recommend that Section (c)(19) be revised as follows: 4-5

(11) HAND GRINDING means metal grinding using a hand tool, including hand powered tools, that prepares, cuts, grinds and polishes or finishes forgings with a disc greater than 3-inch ~~1-inch~~ diameter. Examples include angle grinders, internal diameter "I.D." grinders, disc grinders, and side grinders.

5. Section (d)(1) should be revised to exclude maintenance repairs requiring less than 3 days to accomplish.

It is impractical to set up a total enclosure for every instance of repair that exists on a piece of equipment that is not movable. Partial collection is possible but some equipment is too large to put a roof over. We recommend the following change to Section (d)(1): 4-6

(d) Total Enclosures

(1) An owner or operator of a metal forging facility is prohibited from conducting any metal grinding ~~and metal cutting~~ operations outside of a temporary enclosure, enclosure, or total enclosure. This requirement shall not apply to maintenance repairs requiring less than 3 days to accomplish~~.~~

6. Section (e)(2) should be revised to limit the HEPA filter requirement to metals which are compatible with that technology. We recommend that Section (e)(2) be revised to limit the use of HEPA technology to those operations where such technology is permitted under applicable OSHA and NFPA standards.

As noted at a recent California Metals Coalition meeting, HEPA is generally not compatible for control of titanium, magnesium, or aluminum fines. The applicable NFPA standards will not allow dry powder to 4-7

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be collected due to the chance for spontaneous combustion when very small particles are exposed to water or other oxidizers. Without NFPA approval, the metal forger cannot get insurance for the equipment and without NFPA approval, the city will not issue a building permit. We recommend that Section (e)(2) be revised to limit the use of HEPA technology to those operations where such technology is permittable under both OSHA and NFPA standards. 4-7 cont

7. **Source testing requirements should be differentiated to focus testing on source operations with higher emissions, and focus testing on pollutants of concern.**

As currently drafted, the source testing requirements in PR1430 would apply the same requirements to all affected source operations. This would be regardless of whether the source has any considerable controlled emissions, and would require testing the same array of pollutants even if certain pollutants were known not to be present at the source. As an example, the rule would require ongoing hexavalent chromium testing even where the compound is known not to be present. This one-size-fits-all approach could cause a significant degree of unnecessary source testing. And it would also create considerable compliance expense to metal forging facilities without environmental purpose. 4-8

Weber recommends that Section (h) be revised to focus source testing requirements on those sources with considerable levels of controlled emissions. Additionally, we recommend that Section (h)(2) be revised such that protocols can be approved on a case-by-case basis to exclude pollutants not reasonably suspected at the source.

8. **We support implementing PR1430 as quickly as possible. However, we are deeply concerned that certain timetables in the current draft of PR1430 are simply not achievable. We request that District Staff work with the affected industry to develop achievable deadlines for compliance with PR1430's various requirements.**

There are a number of sections of PR1430 which would require compliance within either six months or twelve months. These include standards which would potentially require the engineering, design and construction of new structures and/or emissions control equipment. Since PR1430 was only released in draft form on 30 November and is not final, affected facilities have a limited understanding of what will ultimately be needed for the new or modified operations. And while such grinding operations and associated emissions controls have historically been exempt from District permit pursuant Rule 219, we understand that construction and installation of such equipment would now require a District Permit to Construct once PR1430 is adopted. The District's permitting process often takes 6-9 months by itself. 4-9

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For these reasons, we are very concerned that the timetables proposed in Section (d)(3), Section (d)(4), Section (d)(8), and Section (e)(1) may simply be unachievable given the need for permits and the potential need for construction/installation. Generally speaking, we believe it would be reasonable to require compliance "six (6) months after Permit to Construct issuance" for those requirements involving new or modified enclosures and/or control equipment. We request that District Staff work with the affected industry to develop achievable deadlines for compliance with PR1430's various requirements. 4-9 cont

Weber Metals appreciates the opportunity to submit these comments. Should you have any questions or wish to discuss further, please do not hesitate to contact me at (562) 602-0260 ext. 259

Sincerely,

Doug McIntyre
Vice President, Plant Engineering

Cc: Rick Creed, Weber Metals
William Cacheris, Weber Metals
Queen Uchekwe, Weber Metals
Scott Weaver, ERM

4-1 Response: Thank you for your comment. The SCAQMD appreciates your comments and staff is working to provide a proposed rule that will provide a clear and achievable pathway to compliance. The SCAQMD appreciates that Weber Metals has allowed staff to visit your facility on multiple occasions to observe Weber Metals' grinding, cutting, and forging operations.

4-2 Response: Although Proposed Rule 1430 does not include a low volume/low use exemption, there are provisions in the proposed rule that are designed to address specific grinding operations that would be low volume/low use. The proposed rule includes in the definition of "hand grinding" excludes grinders that have a disc less than or equal to 1-inch in diameter and there are special provisions for grinding pieces that have a surface area less than 25 square inches.

4-3 Response: Staff modified the definition of "metal cutting" in Proposed Rule 1430 to include "a process used to *abrasively* cut starting ingot, log, or billet stock…" By including the word abrasively, band saw cutting would not be subject to the provision for other cutting operations where fugitive metal dust is created from the abrasive nature of the cutting operation.

4-4 Response: Please see response to comment #4-3. The addition to comment #4-3 to include only abrasively cutting operations is intended to exclude vertical band saw cutting and hot cutting operations. Staff visited Weber Metals on

December 22, 2016, to observe the band saw cutting and hot cutting operations, and agrees that these operations primarily generate large metal chips and shavings, where the focus of this proposed rulemaking is on metal particulate that can become airborne.

4-5 Response: The proposed rule applies to metal grinding operations and metal forging facilities. Auto body shops, weld shops, construction, and home owners are not affected by the proposed rulemaking. Proposed Rule 1430 does include a provision that has special provisions for metal forging facilities that are grinding pieces that have a surface area less than 25 square inches. In addition, PAR 1430(b) excludes grinding activities conducted to maintain or repair equipment at the facility.

4-6 Response: The applicability section excludes grinding activities conducted to maintain or repair equipment at the facility. Proposed Rule 1430 requires that metal grinding, metal cutting, and small metal hand grinding operations be conducted within a total enclosure. The definition of metal cutting was modified to include abrasively cutting operations.

4-7 Response: In regards to the requirement to install a final stage of the emission control device with HEPA filters, Proposed Rule 1430 states under paragraph (e)(2) that the system should be designed "in a manner that does not conflict with requirements or guidelines set forth by the OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety." There are a variety of options that a facility can comply with Proposed Rule 1430 without being inconsistent with NFPA guidelines such as use of spark arrestors or installation of the baghouse outside of the total enclosure, which is the typical practice based on staff's observations.

4-8 Response: Proposed Rule 1430 includes a provision that allows a facility to forego the hexavalent chromium source test if they can demonstrate that the total chromium level is less than 1 percent in the baghouse catch. The facility would be required to test the baghouse catch at each change out.

4-9 Response: The compliance time under Proposed Rule 1430 for installation of pollution controls for grinding operations and pollution controls for total enclosures with negative air have been revised to 6 months after a Permit to Construct is issued.

Comment Letter #5
California Metals Coalition
December 19, 2016

CALIFORNIA METALS COALITION

Main Office and Mailing Address: 2971 Warren Lane El Dorado Hills, CA 95762
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To: Ms. Susan Nakamura
Sent via email: snakamura@aqmd.gov
Mr. Eugene Kang
Sent via email: ekang@aqmd.gov
Mr. Daniel Garcia
Sent via email: dgarcia@aqmd.gov

CC: SCAQMD Board of Governors
Wayne Nastri, Executive Officer

December 19, 2016

RE: Comments on Proposed Rule 1430: Metal Grinding at Forging Operations

The California Metals Coalition (CMC) appreciates the opportunity to submit written comments regarding the South Coast Air Quality Management District's (SCAQMD) Proposed Rule 1430: *Control of Emissions from Metal Grinding Operations at Metal Forging Facilities.* CMC has been engaged in the pre-rulemaking process since 2013, as well as the formal rulemaking process initiated with the first working group meeting on October 7, 2015. The comments in this letter are in response to the second draft rule language, which was released **Friday, December 16, 2016**. 5-1

First and foremost, CMC has stated at the SCAQMD public working group meetings, and reiterates in this letter, that we support the rulemaking for Proposed Rule 1430.

Secondly, CMC has stated at the October 26, 2016 public workshop in Diamond Bar and December 1, 2016 public workshop in Paramount that process grinding operations conducted outdoors are not an acceptable practice for the metalworking industry.

CMC is a statewide organization with approximately 250 members. The majority of CMC members meet the definition of a small business. CMC holds quarterly roundtables, most recently on December 9th in Paramount, to guide all members on best management practices, housekeeping, and emission control technologies available to the industry. Gathering as an

industry allows us to learn from one another. It is especially helpful for us to meet at larger metalworking facilities in centralized areas. Companies that take the time to attend a 3-hour CMC quarterly roundtable know that we are advocating for them to learn, network, and stay ahead of the compliance curve.

Finally, SCAQMD staff is quickly moving to bring Proposed Rule 1430 in front of the Governing Board at the earliest available date, March 3, 2017. CMC submits its written comments with the expectation that staff will review and address comments without delaying the rulemaking. This is an aggressive timeline and goal, but CMC is committed to being part of the solution. 5-1 cont

Comment #1: Clear Communication on Hexavalent Chromium and Metal Grinding

The following comment reflects CMC's verbal comments from the working group meetings on September 14, 2016 and October 26, 2016.

CMC shares the public's concern on the elevated levels of hexavalent chromium detected in the city of Paramount. Metal forging employees work daily in industrialized areas of Southern California, and employee families commonly reside in the area. More importantly, the residents, students and businesses that call Paramount home have a right to clean air.

It is equally important to maintain clear communication on the sources of hexavalent chromium at metalworking facilities, how hexavalent chromium is generated at metalworking facilities, and what air district rules will reduce the dangerous levels.

Based on the nature of metal grinding and expanded air monitoring data disclosed by the SCAQMD, it is our understanding that the dangerous levels of hexavalent chromium in Paramount will not be reduced by focusing on grinding operations at metal forging facilities. 5-2

For hexavalent chromium to be generated by metal grinding, one must first understand how hexavalent chromium is created. To begin, the first indicator is the presence of chromium in its elemental form. Chromium can be added to molten ferrous alloys to meet certain metallurgical requirements. A common example is stainless steel, which is generally 80% iron, 15% chromium and 5% nickel.

The presence alone of chromium in the microstructure of the metal does not mean hexavalent chromium has been created. Hexavalent chromium is generated when the metal is heated to a degree very near or at its melting point, which is around 1450 degrees centigrade. To demonstrate the heat threshold to convert chromium into hexavalent chromium, one can look at stainless steel metal cookware. Stainless steel metal cookware is sold and used in millions of

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households, but the temperature of cooking does not convert chromium into hexavalent chromium.

The second indicator is whether enough heat is generated during grinding on metals containing chromium to generate hexavalent chromium. Grinding operations are predominantly finishing operations done once the product has solidified. An operator will use a hand grinder or table grinder to finish the smaller metal parts. If the part is larger, a swing grinder will be used.

Since proper grinding is done at temperatures below melting point, it is unlikely that a metal forging facility will convert chromium to hexavalent chromium at the point of grinding. The heated friction between the grinding wheel and metal product can get hot, but is not the temperature levels seen at melting point.

This scientific examination of hexavalent chromium follows SCAQMD's chronological data gathering and discoveries. SCAQMD's November 4, 2016 report titled *Expanded Monitoring of Hexavalent Chromium in Paramount—Assessment of Initial Data*[1] states on page 1 that "additional investigation was needed to determine the source of the hexavalent chromium." The report goes on to chronicle the expansion of air monitoring "to narrow and identify the specific source or sources of hexavalent chromium in the area." It concludes on page 4 by stating "the purpose of the expanded monitoring was to locate the sources of hexavalent chromium." 5-2 cont

Staff should address the following science-based comments on hexavalent chromium and grinding:

A. Chromium must be present in the alloy to potentially generate hexavalent chromium. But proposed Rule 1430's definition of "(13) Metal" lists examples such as "metals include, but are not limited to, iron, steel, and their iron-based alloys, stainless steel, aluminum, copper, brass, bronze, gold, silver, zinc, tin, lead, platinum, nickel, chromium, cadmium, manganese, tungsten, and titanium and their non-ferrous alloys". Proposed Rule 1430 must be clear on what alloy(s) can potentially be converted to hexavalent chromium.

B. Chromium is converted to hexavalent chromium at processes with a certain temperature threshold, more specifically at the melting point of the alloy. Proposed Rule 1430's definitions of "(2) Billet Grinding," "(10) Hand Grinding", "(14) Metal Cutting", "(22) Small Hand Grinding," "(23) Stand Grinding", and "(24) Swing Grinding" will not meet this temperature threshold, but are included in the rule as sources of hexavalent chromium emissions. Scientific justification is expected in Proposed Rule 1430 for how grinding and cutting generates hexavalent chromium.

[1] http://www.aqmd.gov/docs/default-source/compliance/Carlton-Forge-Works/final-paramount-ass-initial-monitoring-data-10416.pdf?sfvrsn=4

C. Proposed Rule 1430 has been promoted as a toxics rule, and is placed in the "1400" category of SCAQMD rules. On October 26, 2016, staff focused much of the working group meeting on hexavalent chromium and discussed the use of CARB test method 425. It would be helpful to all stakeholders to release SCAQMD's lab reports, not just the results, from the air monitors. The lab reports are arguably more important than the data summaries. This is important communication because Proposed Rule 1430 states it will reduce "toxic" emissions, ex: hexavalent chromium.

D. SCAQMD requires in Proposed Rule 1430 that point source testing be conducted under "(h) Source Tests". But CMC is unaware of SCAQMD conducting its own point source tests to support the conclusion that hexavalent chromium is generated at grinding operations. It would be expected that SCAQMD has conducted point source testing on hand grinding, stand grinding, swing grinding, and billet grinding during the multi-year rulemaking process. This is additionally important because fugitive emissions do not occur without source emissions. Bag house dust, glass plates on roof tops, and neighborhood air monitors offer cumulative data results from multiple processes or multiple neighboring sources. SCAQMD should state whether or not it has conducted point source testing at metal forging process grinding operations. And if this data has been collected, the lab data—especially for hexavalent chromium—should be shared with the public.

5-2 cont

Comment #2: Hexavalent Chromium Source Testing Requirement at Metal Forging Facilities that Do Not Generate Hexavalent Chromium

The following comment reflects CMC's verbal comments from the working group meeting on October 26, 2016.

Proposed Rule 1430, section "(h)(1)(B) Source Tests" is required every 48 months for hexavalent chromium and multiple metal emissions. It is unclear why all grinding operations would be pre-determined to generate hexavalent chromium. Based on "Comment #1", a scientific explanation for the assumed creation of hexavalent chromium at all grinding operations has not been established by the SCAQMD staff. CMC suggests that unless the SCAQMD can determine that hexavalent chromium is reasonably present at all point source grinding operations, this subsection should be amended.

5-3

Comment #3: Defining Volume Metrics for a Metal Forging Rule

The following comment reflects CMC's verbal comments from the working group meetings on September 14, 2016, October 26, 2016, and December 1, 2016.

5-4

At the last three public workshops, the SCAQMD staff noted that the 22 metal forging facilities visited demonstrated unique quantities of metal grinding particulate matter being generated. Volume of metal grinding was how staff distinguished a new rule for metal forging facilities.

Examples provided by staff included: the significant amount of particulate matter created during billet grinding, the size or surface area of the metal products being grinded at metal forging shops, and the intensity of grinding being conducted at a metal forging shop. Based on staff's presentation of this information, volume calculations were expected to be included in Proposed Rule 1430 to support these conclusions.

As an example, "(2) Billet Grinding" removes inches of metal from large metal billets that can measure 32 square inches and 10 feet long. A volume calculation can be established to estimate the volume of particulate matter being created. Intensity, time/duration, and particle size are also factors within the calculation.

As a second example, "(24) Swing Grinding" is used on larger metal products. A volume calculation can be established to estimate the volume of particulate matter being created. Intensity, time/duration, and particle size are also factors within the calculation.

As a third example, "(23) Stand Grinding" is for small parts that can be easily handled by an individual worker. Grinding occurs at a standing grinding table and the activity typically includes taking off the rough edges (approximately 1/8 inch) from the part. A volume calculation can be established to estimate the volume of particulate matter being created. Intensity, time/duration, and particle size are also factors within the calculation.

5-4 cont

As a fourth example, "(10) Hand Grinding" is for smaller surface areas or polishing. The hand grinder is portable, and conducted on a part much smaller than swing grinders. A volume calculation can be established to estimate the volume of particulate matter being created. Intensity, time/duration, and particle size are also factors within the calculation.

Finally, as a fifth example, "(22) Small Hand Grinding" is similar to hand grinding, but acknowledges the need to define total surface area. A volume calculation can be established to estimate the volume of particulate matter being created. Intensity, time/duration, and particle size are also factors within the calculation.

Overall, Proposed Rule 1430 seeks to regulate several different types of grinders that perform very different functions, and create vastly different volumes of particulate matter. Relying on Proposed Rule 1430's single solution approach for all grinding operations does not match the unique SCAQMD staff field reports conveyed at working group meetings. CMC expects that the SCAQMD will create a volume metric and match the volumes of particulate matter to the various proposed solutions within Proposed Rule 1430.

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Comment #4: Sensitive Receptors, Zoning, and SCAQMD Advocating for Public Health

Proposed Rule 1430, section "(d)(8) Total Enclosure with Negative Air" uses a 300-foot sensitive receptor measurement, or 1,000-foot school measurement, to require a total enclosure with negative air. This type of measurement is used by several air agencies in California, including the California Air Resources Board (CARB), to keep new schools, residences, hospitals, or prisons away from facilities with toxic metals, such as hexavalent chromium.

CMC is not suggesting changing this requirement in Proposed Rule 1430, but must express its significant and ongoing frustration with zoning decisions that continue to be made by select cities throughout the South Basin.

Nearly all CMC members have occupied industrial areas of the South Basin long before the construction of parks, schools, residences, hospitals, or businesses with sensitive receptors. CMC has countless situations where metal facilities acquire a new neighbor, and the new neighbor is a sensitive receptor.

As an example, one of our light industrial metal working members recently made a $10 million equipment investment in his company only to have a swimming school, day care, and restaurant approved by the city and built within 300 feet.

CMC asks the SCAQMD to become a stronger advocate for public health by getting directly involved in city planning decisions. The current approach is not effective, especially if the SCAQMD is relying on advisories. This advocacy will require the use of SCAQMD's many lobbyists in Sacramento to create the necessary change for our future.

5-5

Comment #5: Proposed Rule 1430's Trigger of City Building Permits, CEQA, etc.

The following comment reflects CMC's verbal comments from the working group meeting on October 26, 2016.

Many of the structures at metal forging facilities are not immediately conducive to total enclosures, bag houses, secondary filters, and especially negative air. Changes will need to be made to the building to allow the requirements within Proposed Rule 1430 to be met. It is expected that these changes will trigger building permit requirements from the city, CEQA review, fire departments, and even SCAQMD's own permitting process. Here are some examples:

- "(d) Total Enclosure"
- "(d)(8) Total Enclosures with Negative Air"
- "(e)(1) Metal Grinding Emission Requirements" emission control device

5-6

6

- "(e)(2) & (3)" HEPA filters or an equivalent secondary control device

Under Proposed Rule 1430, each of the bulleted items above has completion requirements of "no later than [6 months after Date of Rule Adoption]" or "no later than [12 months after Date of Rule Adoption]."

This requirement will be a challenge and likely result in a violation of the rule if the SCAQMD does not take into account the time it takes to receive a permit from the city, conduct a CEQA review, pass fire department or other local agency reviews, and complete the SCAQMD permitting process. The 6-month and 12-month deadlines cannot be met without considering the aforementioned permitting and review requirements. 5-6 cont

CMC suggests amending Proposed Rule 1430's language to acknowledge the legal steps required before starting to build a total enclosure, total enclosure with negative air, bag house, emission control device, or HEPA filter.

Comment #6: December 9th Metal Grinding Public Advisory Notice

While Proposed Rule 1430's language does not include the December 9th Public Advisory Notice on outdoor metal grinding, the content of the notice is directly related to this proposed rule. As a result, CMC has included comments in this letter.

The South Coast Air Quality Management District (SCAQMD) released a public notice dated Friday, December 9th, that advised "all grinding operations" to be conducted indoors. As stated in the opening of this comment letter, CMC agrees with—and has proactively promoted to its members—that process grinding operations should not be conducted outdoors.

But the public advisory does not make any distinction between process grinding operations and repair or maintenance. This is confusing to the industry, and likely confusing to the public, especially when the advisory states "emissions may increase health risks for receptors." 5-7

Repair or maintenance grinding is conducted to keep emission control systems properly operating, to keep containers properly functioning, to fix structures, to avoid accidents, to protect workers, or to simply keep operations running safely. The same grinding equipment (most commonly hand grinders) that is used for process grinding operations may be used for repair or maintenance. The distinction is the duration of the activity, volume of particulate being produced, item being grinded, and purpose of the grinding. The SCAQMD needs to properly advise this in future notices.

Finally, SCAQMD should advise all the operations that conduct metal grinding (See Comment #10) since it is not limited to metalworking facilities.

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Comment #7: Avoiding Unintended Consequences of (k) Signage

The following comment reflects CMC's verbal comments from the working group meeting on December 1, 2016.

Proposed Rule 1430 requires all metal forging facilities to install a 16 square foot sign that says "TO REPORT ODORS FROM THIS FACILITY, CALL EITHER [FACILITY CONTACT PHONE NUMBER] OR THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG"

If SCAQMD's intent is to educate the public on the SCAQMD phone number and inspection resources, then direct mailing (especially in impacted industrialized areas) of a SCAQMD brochure is the best way for an individual to receive this information. A second option is to include an informational ad in the local newspaper. A third option is to hold more town hall meetings. But placing a sign on 22 metal forgers—which are a small fraction of the 27,000 permitted facilities that are also potential sources of odors across the four counties of Los Angeles, Orange, San Bernardino and Riverside—it is doubtful how this will achieve the goal of educating the public about the SCAQMD resources.

If SCAQMD's intent is to have the community member be able to quickly contact the metal forging facility, then the verbiage of the sign should be changed. The sign should say "TO CONTACT [NAME OF FACILITY] ABOUT ANY CONCERNS, PLEASE CALL [FACILITY CONTACT PHONE NUMBER]." 5-8

If SCAQMD's intent is to pre-determine that all metal forging facilities inherently have nuisance odors, or that odors in a neighborhood should first be directed to a metal forging facility, CMC has to question SCAQMD's goal for singling-out 22 metal forgers in this new rule.

CMC's primary concern isn't in regards to how SCAQMD handles confirmed odor nuisances, but rather how SCAQMD records an unconfirmed complaint. An unconfirmed complaint means that either the odor/air contaminant release could not be detected, or the source/facility cannot be determined.

Although the source of the odor could not be detected, the SCAQMD records the name of a company. This recording system places a negative mark on the business. It is not uncommon for the SCAQMD system to accumulate 10, 50, 100 or even 200 unconfirmed odor complaints. The media, elected officials, lawmakers, or public see this log of unconfirmed complaints and conclude that action must be taken. Unconfirmed odor complaints are damaging to an individual business.

One simple solution is to change how SCAQMD logs unconfirmed odors. Unconfirmed odors should be recorded by the nearest cross-streets. An example would be to record, "an unconfirmed

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odor was alleged at the cross streets of Paramount Blvd and Alondra Blvd". Until the issue of unconfirmed odors is rectified by the SCAQMD, unintended consequences are likely to occur.

Section "(k) Signage" should be amended or omitted based on SCAQMD's response to the aforementioned concerns. 5-8 cont

Comment #8: (j)(1) Recordkeeping

Section (A) requiring "monthly records indicating the weight of metal processed by the facility" should be removed or made confidential. California metal forging companies compete around the world. Publicly disclosing the amount of metal processed by the facility is a competitive disadvantage. In addition, sellers of metal to the metal forging facility can use this information to potentially determine the demand side of an economic transaction. Overall, it is unclear how publicly reporting the weight of the metal processed will further the goals of Proposed Rule 1430.

Section (F) requires a "log of reports…regarding odors or other air quality related issues." This requirement may also have unintended consequences. When a metal forging facility works with a neighbor to resolve a potential odor or air quality issue, this should be encouraged by the SCAQMD—not reported under a rule requirement. In certain situations, this report log could be misconstrued to make false determinations about compliance or health risks. 5-9

Along the lines of Comment #7, the industry is becoming more and more sensitized about how unconfirmed odor complaints are being recorded by the SCAQMD. Section (F) just creates a different layer of scrutiny similar to unconfirmed odor complaints and should be amended or omitted.

Comment #9: Benefits of Good Housekeeping; Compressed Air; Dry Sweeping:

The following comment reflects CMC's verbal comments from the working group meeting on October 26, 2016.

Proposed Rule 1430, section "(f) Housekeeping Requirements" will be the most effective part of this rule. Particulates from metal grinding and metal cutting are predominantly heavier particles that fall to the ground. If they are not cleaned up, contained, and/or stored, then the potential to track particulate matter out of the facility will increase. The SCAQMD should emphasize housekeeping as one of the key benefits of Proposed Rule 1430. 5-10

Subsection "(f)(3)(C) Housekeeping Requirements" states that "compressed air cleaning operations or dry sweeping shall not be conducted within 30 feet of any metal cutting or metal grinding operation."

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Compressed air does not clean. Compressed air is used so that the grinding operator can see if he or she has successfully smoothed the part. CMC suggest that the SCAQMD revisits this subsection and get some more information from the metal forging community on how compressed air is used at grinding stations.

Eliminating specific dry sweeping will work directly against good housekeeping measures at a metal forging facility. Based on the configuration of the grinding space, there could be spatial limitations if dry sweeping is not an option. CMC suggests eliminating the new dry sweeping requirement within 30 feet of any metal cutting or metal grinding operation.

5-10 cont

Comment #10: Grinding Regulation Will Set a Precedent for 20,000+ Facilities

SCAQMD has proposed to regulate all metal grinding. Examples of operations that conduct some form of metal grinding across the 10,750 square miles of Los Angeles County, Orange County, San Bernardino County, and Riverside County are:

- Ports
- Ship yards
- Rail yards
- Auto repair shops
- Water utilities
- Electric utilities
- Waste management facilities
- Concrete facilities
- Refineries
- Residential construction
- Office construction
- Road construction
- General construction
- Clean energy projects
- Truck repair stations
- Prisons
- Airports
- Naval yards
- Jewelry making and repair
- Artwork

Proposed Rule 1430 will set a precedent for 20,000+ facilities because:

1. SCAQMD staff states grinding is an unregulated activity that it will now regulate.
2. SCAQMD staff concludes that all grinding is a source of toxic or particulate emissions.

5-11

10

3. SCAQMD staff concludes that all types of grinders larger than 1" are a source of toxic or particulate emissions.
4. SCAQMD staff concludes that all metals (even gold and platinum) are a source of toxic or particulate emissions.
5. SCAQMD staff concludes no distinction for the duration of grinding.
6. SCAQMD staff concludes no distinction for the intensity of grinding.
7. SCAQMD staff concludes no distinction for the volume of grinding particulate created.
8. SCAQMD staff concludes no distinction for the number of grinders used at a facility.

To provide an example of how this proposed rule will set a precedent, hand grinding conducted at a metal forging facility is the same as hand grinding done at a construction site, auto repair shop, port, airport, water utility line installation, etc. Under Proposed Rule 1430, SCAQMD's precedent is for all grinding, from all sources, based on any duration, intensity, volume, or metal to: (1) All metal grinding operations must be under a total enclosure. (2) All metal grinding must be vented to an emission control system. 5-11 cont

The purpose of this comment is to emphasize the need for SCAQMD staff to provide more detailed rule language, and define why Proposed Rule 1430 is specific to metal grinding conducted at metal forging operations.

Comment #11: Conclusion

For the last 48 months, SCAQMD examined metal grinding as a potential source of hexavalent chromium generation. 45 of these 48 months (January 2013 to September 2016) concentrated on 22 metal forging facilities throughout the South Basin, with much focus on a single facility in Paramount.

The last 3 months (October 2016 to December 2016) have been significant for the SCAQMD. Expanded air monitoring efforts uncovered locations and processes prone to generating the dangerous levels of hexavalent chromium in the city of Paramount.

On November 30, 2016, the city of Paramount released a list of 88 metalworking businesses that are known in the industrial area. On December 12, 2016, SCAQMD shared that a multi-agency efforts has visited 170 facilities in the last 6 weeks. CMC expects there will be more businesses to be discovered, especially when the SCAQMD focuses on rogue operations. 5-12

Based on the expanded number of businesses currently being uncovered, new data collected by the SCAQMD, recent enforcement activities, and science of metal grinding, CMC concludes that Proposed Rule 1430 will provide the following:

a) Bringing Process Grinding Operations Indoors.

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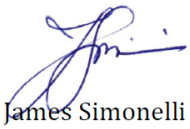
b) Permitting of Grinding Equipment.
c) Possible Reduction of Nuisance Dust and Particulates.
d) Potential Reduction of Odor Complaints.
e) Better Housekeeping.

5-12 cont

On behalf of the California Metals Coalition, thank you for the opportunity to participate in the rulemaking process for Proposed Rule 1430: *Control of Emissions from Metal Grinding Operations at Metal Forging Facilities*. If you require any additional information, please do not hesitate to contact us directly.

CMC looks forward to the next working group meeting, receiving feedback on its enclosed comments, and finding quick, science-based solutions for communities in the South Basin.

Sincerely,



James Simonelli
Executive Director

5-1 Response: The SCAQMD staff appreciates that the California Metals Coalition supports the rulemaking for Proposed Rule 1430. The SCAQMD also concurs with the California Metals Coalition that process grinding operations conducted outdoors are not an acceptable practice for the metal working industry. Responses to the California Metals Coalition's comments are provided below.

5-2 Response: The proposed rule is not targeting a specific toxic air contaminant, but is addressing metal particulate some of which are toxic air contaminants. In Working Group Meeting #2, staff explained that based on ambient monitoring on Vermont Ave. near Carlton Forge Works, there were two metals of concern, nickel and hexavalent chromium. These metals were identified based on the levels and their toxicity. The SCAQMD staff had explained that the voluntary measures that Carlton Forge Works had implemented to reduce metal particulate emissions from their metal grinding operations showed a reduction in nickel levels, but not hexavalent chromium levels. This was an indication that the hexavalent chromium levels were likely coming from additional source(s) that could possibly come from operations other than metal grinding within the forging facility or possibly from a separate source. SCAQMD staff held a Town Hall Meeting in the city of Paramount on August 16, 2016 committing to conduct expanded monitoring of hexavalent chromium.

In October 2016, the SCAQMD staff initiated additional hexavalent chromium monitoring in the city of Paramount to identify the source(s) of hexavalent chromium. This expanded monitoring effort included three sites near Carlton Forge Works on Illinois and Somerset, Illinois and Adams, and Illinois and Jefferson. As shown in Table A-1 below, of the seven monitored values between October 15 through November 2, 2016, levels near or above 1 ng/m3 at Sites #5 and #6 indicated that additional monitoring is needed to better understand the source(s) of hexavalent chromium. Separate from monitored levels near Carlton Forge Works, monitored levels several blocks south of these monitors revealed much higher levels where SCAQMD resources were needed. However, SCAQMD staff will be conducting additional monitoring near Carlton Forge Works to better understand the source(s) of hexavalent chromium. Future amendment to Proposed Rule 1430 or other actions for facilities unrelated to metal forging may be needed, depending on results of additional monitoring.

Table A-1

Hexavalent Chromium Monitoring Date	Site #4 Illinois/ Somerset	Site #5 Illinois/ Adams	Site #6 Illinois/ Jefferson
Saturday, October 15, 2016	0.28	0.06	1.0
Tuesday, October 18, 2016	0.43	1.2	0.46
Friday, October 21, 2016	0.41	0.68	0.9
Monday, October 24, 2016	0.34	0.59	0.89
Thursday, October 27, 2016	0.21	0.28	0.98
Sunday, October 30, 2016	0.08	0.23	0.29
Wednesday, November 2, 2016	0.2	0.42	0.53
Average	**0.28**	**0.49**	**0.72**

It is appropriate to include Proposed Rule 1430 as a 1400 rule since reduction in metal particulate will reduce those metals that are toxics. Glass plate samples placed at four facilities, Carlton Forge Works, Weber Metals, Press Forge, and Schlosser Forge in 2014 near their grinding operations showed the presence of various metals, some of which are toxic such as arsenic, cadmium, and nickel to name a few shown as shown in Table A-2 below. Pollution controls to reduce metal particulate will concurrently reduce toxic metals.

Table A-2
Glass Plate Sampling at Metal Forging Facilities (2014)

	Location Description	As	Ba	Ca	Cd	Co	Cr	Cu	Fe	K	Mn	Mo	Ni	Pb	Sb	Sn	Sr	Ti	V	Zn
Carlton Forge	Roof of grinding room	6.81	418	18,500	2.12	555	607	665	35,300	6,220	430	217	3,340	89.8	7.98	33.1	181	2,320	134	1,300
	West side of roof of saw bldg	6.98	491	19,300	2.37	761	815	815	33,500	7,260	449	287	4,500	130	9.71	31.9	205	2,390	130	1,330
	East side of roof of saw bldg	7.09	521	18,000	2.43	556	661	624	26,200	6,870	391	279	3,620	94.3	9.53	31.2	215	2,470	118	1,500
	Roof of Residence across street from facility	7.63	547	21,700	1.99	258	358	746	27,100	7,690	438	149	1,750	133	10.3	42.8	185	2,290	96.8	1,270
	Top of fence along perimeter of parking lot	8.29	583	20,700	1.51	146	234	271	28,200	8,810	470	89.8	1,020	99.6	14.3	30.7	207	2,120	82.1	1,140
Weber Metals	Site #1 Roof of Bldg O	16.3	513	34,400	1.66	17.1	98.4	450	28,000	12,000	467	37.3	172	91.2	9.24	20.4	229	2,730	302	1,720
	Site #2 Open area next to tracks	17.4	2,370	35,100	1.39	17.6	160	578	71,500	12,500	637	35.5	215	98.7	6.92	21.8	272	2,720	237	1,630
	Site #4 Top of Transformer at North perimeter of facility	10.5	453	29,500	1.89	18.7	310	731	42,300	7,200	454	163	862	100	10.9	74.3	241	8,710	568	2,110
	Site #5 Roof of Bldg P	9.62	521	28,600	1.53	20.9	224	632	36,100	9,160	606	67.2	508	99.8	8.54	35.1	204	12,500	736	1,790
	Site #6 Top of Patio adjacent to Bldg L	6.98	575	31,100	2.37	13.5	86.8	654	27,700	7,060	398	23.8	151	211	87.5	89.8	184	1,850	75.8	2,080
	Site #7 Roof of storage shed at Promise Hospital	18.3	495	14,300	3.14	48.9	1,990	997	161,000	6,690	1,130	995	5,810	89.3	12.1	77.6	167	10,200	683	864
Press Forge	Site #1 Roof of outside grinding station	6.61	59.3	5,780	4.67	1,340	5,070	722	194,000	1,710	1,190	1,640	18,200	15.3	0.08	6.1	63.3	7,150	774	154
	Site #2 Roof of larger outside grinding station	8.46	38.2	3,080	6.53	791	5,140	786	197,000	1,010	1,230	2,290	18,600	14.7	0.15	7.7	51.5	7,030	919	81.1
	Site #3 Adjacent to Forge Building	12.5	333	17,200	2.4	60.1	1,170	364	116,000	4,980	835	634	4,110	55.2	5.4	85	153	9,770	794	746
	Site #4 Adjacent to 2nd Forge Building	9.65	481	20,600	2.6	36.2	224	247	39,100	8,570	532	125	757	618	9.3	503	183	2,840	136	1,170
	Site #5 North Perimeter of facility	9.73	527	20,300	3.26	31.3	181	437	32,700	7,910	473	55.1	430	414	10.3	18	179	2,510	109	1,150
	Site #6 Adjacent to Eng Building	11.2	344	19,900	2.64	34.1	711	292	79,400	5,650	707	380	2,730	81.3	6.9	62	164	6,220	440	894
	Site #7 Storage shed at Promise Hospital	13.9	430	20,400	3.66	83.2	1,260	468	105,000	7,070	838	769	4,340	70	8.6	112	184	9,510	643	769
Schlosser	Admin Bldg roof	38.4	591	25,062	3.4	329	574	641	44,791	7,607	1133	667.8	2040	106.4	12.2	31	189	1,965	85.02	1,884
	Roof of container adjacent to bldg 4	15.3	450	27,871	4.35	1797	2785	635	59,792	6,288	1170	1505.7	12434	90.78	5.33	20.2	181	2,716	142.9	1,861
	Southeast end of grinding room	20.5	444	25,233	2.65	1072	774	503	36,556	6,027	1084	527.36	7277	107.1	9.97	21.5	213	2,073	99.48	1,751
	Southeast end of grinding room adjacent to emission contr	12.2	248	14,636	4.46	8657	6983	371	27,754	3,531	546	2195.6	58462	48.88	3.81	9.37	148	2,661	149.4	1,035
	On top of modular between bldgs 2 and 3	11.2	243	19,163	3.74	4540	3742	483	34,852	3,631	599	1758.1	31059	46.04	2.3	10	124	1,988	148.3	1,477

5-3 Response: Staff has added a provision in Proposed Rule 1430 that will allow facilities that can demonstrate that if the particulate in the catch of the baghouse is 1 percent total chromium or less, that they would not be required to conduct a source test for hexavalent chromium. This demonstration would be required to be made at each changeout of the baghouse catch.

5-4 Response: Based on site visits to metal forging facilities subject to Proposed Rule 1430, metal grinding is an integral part to the metal forging operation. The SCAQMD staff does not have volume information regarding the amount of particulate that is being created as this is a newly regulated source category. Proposed Rule 1430 under paragraph (j)(1) will require that facilities submit monthly records of the weight of metal waste collected by the baghouse catch.

As you are aware, when the rulemaking began there were four facilities that were conducting grinding in the open air, with no pollution controls. The facilities that were grinding in the open air are using either hand or swing grinders. It is the SCAQMD staff's understanding that establishing requirements that prohibit open grinding and pollution controls are not inconsistent with CMC's comments stating that the "…process of grinding operations conducted outdoors are not an acceptable practice for the metalworking industry."

Proposed Rule 1430 provides variable requirements for small parts grinding and facilities with less than 10 hand or stand grinders. In addition, certain

definitions such as hand grinding excludes hand grinders with discs that are 1-inch or less in diameter.

5-5 Response: The SCAQMD staff does agree that it is unfortunate when siting decisions are made that bring sensitive land uses close to certain industrial sources. The SCAQMD does have a robust Inter Governmental Review (IGR) program to review environmental documents prepared under the California Environmental Quality Act (CEQA). Under the CEQA IGR program, SCAQMD staff reviews CEQA documents from local jurisdictions and provides recommendations on buffer zones and siting distances based on the CARB's Air Quality and Land Use Handbook, where appropriate.

5-6 Response: For requirements where a total enclosure will be constructed or the installation of pollution controls, the compliance date has been changed from 12 months from date of adoption to 6 months from the date the permit to construct is issued. This ensures that the facility is not penalized if there is a delay with issuing the permit to construct. Staff communicated with city building department representatives to ensure that the timeframe was adequate.

5-7 Response: Thank you for your comment. The SCAQMD staff agrees that there is a distinction between process metal grinding and metal grinding for repair and maintenance activities. This distinction is provided in Proposed Rule 1430.

5-8 Response: During the Working Group Meetings and at the Public Workshop and Public Consultation Meetings, there were a number of comments regarding the signage. Community representatives have requested the signs and are requesting that the SCAQMD 1800-CUT-SMOG be the first number. Proposed Rule 1430 does include a new provision that will require facilities to track confirmed odor complaints and after five confirmed odor complaints will require the facility to implement a measure to reduce odors.

Regarding comments about confirmed odor complaints, the SCAQMD will make a distinction between confirmed and unconfirmed odor complaints when discussing this issue to the public.

5-9 Response: The provision to require monthly records indicating the weight of metal processed by the facility has been removed from Proposed Rule 1430.

5-10 Response: The SCAQMD staff agrees that housekeeping is one of the key benefits of Proposed Rule 1430. Housekeeping is the third level of control, after the point source control, and total enclosure for containment of metal particulate. The SCAQMD staff agrees on the efficacy of housekeeping measures to reduce metal particulate in and around the facility and to

minimize re-entrainment of metal particulate particularly from areas where there is foot and vehicular traffic.

Regarding use of compressed air and dry sweeping, the overall objective of this provision is to minimize the opportunity for fugitive dust to become airborne. Under Proposed Rule 1430, compressed air is allowed if the compressed air cleaning operation or dry sweeping is conducted under an emission control device.

5-11 Response: SCAQMD staff has not proposed to regulate all metal grinding. Staff is looking at several options for regulating metal grinding operations. One is to establish requirements in source specific rules as those rules are adopted and amended. The second approach would be to develop a universal grinding rule that would cover a variety of metal grinding operations. Regardless of the approach, the SCAQMD staff will evaluate the sources and identify the appropriate pollution control approach. Similar to Proposed Rule 1430, the SCAQMD staff will work with a stakeholder working group to get input from the regulated industry, agencies, community and environmental groups. Proposed Rule 1430 sets a precedent for metal grinding and metal cutting operations at metal forging facilities. Many of the statements regarding why Proposed Rule 1430 will set a precedent for 20,000+ facilities is taking specific provisions in Proposed Rule 1430 out of context, which is inaccurate and misleading. For a discussion on the need for proposed rule 1430, please refer to Chapter 2.

5-12 Response: The SCAQMD staff agrees that Proposed Rule 1430 will achieve the items you identified. In addition, Proposed Rule will establish standards for point source controls, total enclosures, and housekeeping procedures. These standards will ensure that equipment and measures are properly implemented, with monitoring to ensure continued compliance. Implementation of Proposed Rule 1430 is needed to ensure that metal particulate, some of which are toxic are well controlled to ensure public health protection for the people that live, work, recreate, and educate near those facilities.

Independent Lubricant Manufacturers Association

ILMA
Independent Lubricant Manufacturers Association

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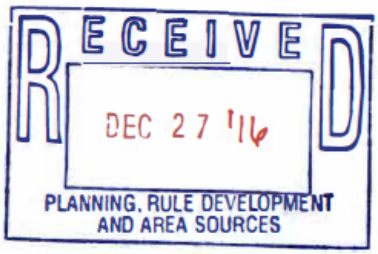

December 19, 2016

Via Electronic Mail (SNakamura@aqmd.gov)

Ms. Susan Nakamura
Acting Assistant Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4182

Re: Proposed Rule 1430 – Control of Emissions from Grinding Operations at Metal Forging Facilities

Dear Ms. Nakamura:

The Independent Lubricant Manufacturers Association ("ILMA" or "Association") submits the following comments on the South Coast Air Quality Management District's ("SCAQMD") pre-rulemaking draft Proposed Rule 1430 - Control of Emissions from Grinding Operations at Metal Forging Facilities. These comments supplement the Association's December 9, 2016 letter.

Definitions

ILMA requests that SCAQMD augment its current pre-rulemaking draft Proposed Rule to reflect the following two definitions for "flood application" and "Minimum Quantity Lubricant."

Flood Application (of Metalworking Fluids for Grinding Metal Parts):

Flood application is the application of a metalworking fluid applied at the grinding wheel/work piece interface that meets all or part of the following conditions and is sufficient to suppress dust, reduce heat and spark generation at the point of cut:

1. Applying the metalworking fluid at a velocity of three (3) feet per second or greater;
2. Applying the metalworking fluid at a volume flow rate of one (1) US gallon per minute or greater; and,
3. Applying the metalworking fluid whereas the nozzle application tip pressure is ten (10) pounds per square inch gauge (PSIG) or greater.

6-1

Ms. Susan Nakamura
December 19, 2016
Page 2 of 2

Minimum Quantity Lubricant:

A Minimum Quantity Lubricant (MQL) is a lubricant, not a coolant, and does so in "minimum quantities." MQL coats the tool work piece interface with a thin film of lubricant and minimizes heat buildup through friction reduction. MQL fluids can be applied by pre-coating the tool in the MQL fluid or by direct application at the tool work piece interface with a fine mist. MQL fluids are not well suited for grinding operations since grinding processes generate significant heat at the point of cut. Thus more cooling is required than lubricity. 6-2

These definitions will ensure that forging operations utilize an appropriate volume of metalworking fluids and that those fluids are applied properly.

* * *

ILMA requests that the definitions above be included in the text of Rule 1430 as well as the modification to the applicability section outlined in the Association's December 9, 2016 letter.

Sincerely,

Holly Alfano
CEO

6-1 Response: Given the range of flood applications in the universe of facilities subject to Proposed Rule 1430 the definition of metal removal fluid is intended to be broad and not to exclude applications based on certain flow rates, etc. However, Proposed Rule 1430 has been modified to incorporate types of flood applications by excluding minimum quantity lubrication techniques from the definition of a metal removal fluid. See response #2 below for clarification on the meaning of minimum quantity lubrication.

6-2 Response: Proposed Rule 1430 has been modified to include a description for minimum quantity lubrication in the definition of metal removal fluid. This description captures the definition proposed by the commenter. Specifically, minimum quantity lubrication is described as, "techniques that coat the tool work piece interface with a thin film of lubricant and minimize heat buildup through friction reduction, further, the proposed Minimum quantity lubrication fluids are applied by pre-coating the tool in the lubricant, or by direct application at the tool work piece.

Comment Letter #7
Valley Forge Incorporated
December 29, 2016

December 29, 2016

To: SCAQMD Board of Directors
CC: Susan Nakamura (snakamura@aqmd.gov), Dan Garcia (dgarcia@aqmd.gov), Eugene Kang (ekang@aqmd.gov), Wayne Nastri (wnastri@aqmd.gov)

RE: Negative Impact of Forging Rule 1430 on a Small Business

Valley Forge, Inc. is 1 of 22 metal forging facilities that will be impacted by Proposed Rule 1430. SCAQMD visited our shop during the rulemaking process. We are a small, family-owned business with 12 employees. The jobs we provide are good-paying jobs with a middle-class wage. 7-1

Valley Forge, Inc. is an open frame, flat die forging facility in Azusa, California. It is in an industrial area and the nearest residential neighborhood is over a mile away. The only material that is ground at the facility is titanium. Titanium is a non-toxic metal. Titanium is safe enough to use in cookware, including the surface of cookware. Because of titanium's biocompatibility, it is safely used in the medical community for dental implants, false eye implants, heart pacemakers, spinal fusions, joint replacements, and more. 7-2

As currently written, Proposed Rule 1430 will put our small company out of business. For Valley Forge, the rule requires any grinding from titanium to be conducted in a total enclosure, with a new baghouse, NFPA combustion control systems, and HEPA filters. This system will cost between $250,000-$1,000,000 when including plans, engineering, permits, source testing, equipment, and maintenance. 7-3

Since titanium is non-toxic, there should be options in Proposed Rule 1430 to allow us to control potential nuisance dust without going out of business. The proposed rule as written has no distinction between toxic and non-toxic metals, size of company, location of company in relation to residential neighborhoods, volume of grinding, or options for particulate controls. 7-4

Valley Forge wants to continue operating its forging facility in Azusa. We ask that you to look at the science and provide options in the rule that match the concerns.

Sincerely,

Michael K Holmes
President, Valley Forge Inc.
444 S. Motor Ave
Azusa, CA 91702

7-1 Response: Based on staff's observations at a site visit at Valley Forge during the rulemaking process, Valley Forge was conducting it's swing grinding operation outside of a building enclosure with no air pollution controls. On January 18, 2017, SCAQMD spoke with Mr. Holmes to discuss the requirements under Proposed Rule 1430.

7-2 Response: Proposed Rule 1430 will help to reduce metal particulate, of which some are toxic air contaminants. Based on glass plate samples that were taken at other metal forging facilities that are also working with titanium, the SCAQMD found that there is the presences of metals that are toxic air contaminants such as nickel, arsenic, and cadmium. Through the abrasive nature of grinding operations, metal particulate can become airborne. As discussed in Chapter 1 of this Draft Staff Report, ambient air monitors have shown that these metal particulate emissions from grinding operations, if not well controlled, can become fugitive. Ambient monitors have also shown, that pollution controls such as baghouses with the appropriate ventilation, combined with total enclosures and housekeeping measures can reduce ambient levels of metal particulates from grinding operations.

7-3 Response: On January 18, 2017, SCAQMD staff spoke with Mr. Michael Holmes regarding the specific provisions of Proposed Rule 1430. Staff discussed the pollution controls that would be needed and the requirements for a total enclosure. Staff clarified that based on the current proposal with some revised modifications, only facilities that were within 1,000 feet of a pre-school or a school or 300 feet of a sensitive receptor would be required to have a total enclosure with negative air that is vented to air pollution controls. (Staff's proposal to extend the distance from 300 to 500 feet for sensitive receptors will not affect Valley Forge). Since Valley Forge is located well beyond these distances, their facility would need a total enclosure, but negative air vented to air pollution controls would not be required. Staff discussed that the grinding operation must be vented to pollution controls and generally discussed the housekeeping provisions and the possible need for a HEPA vacuum cleaner. It is staff's understanding that Mr. Holmes felt that he could comply with the provisions of the proposed rule. Based on staff's estimates, the estimated compliance cost would be closer to $350,000.

7-4 Response: Please refer to Response to Comment #7-2. As discussed in Response to Comment #7-2, glass plate samples have shown that facilities that are working with titanium have shown the presences of metals that are toxic air contaminants. Although titanium may be the primary element, there are a variety of other alloys in various percentages. Glass plate samples as well as ambient monitoring near Carlton Forge Works has shown the presences of other metals (Please refer to Chapter 1 of this Staff Report). Proposed Rule 1430 includes a number of options for facilities. Staff will be adding

a provision that will allow facilities to forgo hexavalent source testing if the baghouse catch at each change out is less than 1 percent. In addition, if the facility is not located near sensitive receptors or schools, negative air vented to pollution controls for the total enclosure will not be required. There are also special provisions for small part grinders and grinding of small parts.

Comment Letter #8
The Boeing Company
January 12, 2017

From: Pearce, William R <william.r.pearce@boeing.com>
Sent: Thursday, January 12, 2017 10:33 PM
To: Daniel Garcia
Subject: Proposed Rule 1430 Comments

Dan, here are general comments and questions with respect to Proposed Rule 1430. I believe the District's intent is to cover forging operations and the following comments follow along those lines. Our basic understanding is that forging is a process that results in metallurgical recrystallization and grain refinement as a result of the thermal cycle (heating metal to plastic deformation temperature) and deformation process. This results in an end product that is uniform in structure and composition. I believe this was what Mike Pearce was alluding to in the meeting. Perhaps a better way to approach the definitions is to have a definition for Metal Forging Operations and a definition for Metal Forging Facility:

- **Metal Forging Operation is the process of forming and shaping metals through the use of hammering, pressing, or rolling by heating raw stock, usually in the form of ingots, logs or billets, to its plastic deformation temperature and then shaping to a desired shape and size.**
- **Metal Forging Facility means any facility that performs metal forging operations. Metal grinding, metal cutting, and small hand grinding operations related to metal forging operations are included.** 8-1
- **With respect to (d)(3), it appears that the District is only allowing the use of total enclosures and precluding the use of other types of equipment that may be as effective in controlling emissions. One specific example are downdraft table booths fitted with HEPA or ULPA filters. However, the units only consist of three walls and a ceiling. Boeing has found these to be very effective when working on small parts. Recommend that the language in (d)(3)(B) allowing alternate methods for compliance if approved by the District also be included in (d)(3)(A).** 8-2
- **Confused about the intent of (e)(5). (d)(3) appears to require the use of a total enclosure. If the total enclosure is vented to a control device, not sure the reasoning behind requiring visual markers for activities that are within a total enclosure.** 8-3
- **With respect to (h)(1)(B), requirements should be specified as part of the source test protocol and District approval process, rather than specifically listed in this section. The information for targeted pollutants is required in (h)(4)(B), which is easily obtained through the SDSs for the raw materials. Facilities should not be required to test for materials such as hexavalent chromium if no materials containing chromium are being processed.** 8-4
- **With respect to (i)(3), appropriate pressure drops should be determined through the permitting process rather than a "one size fits all" approach. Newer filter systems can handle higher pressure drops with no degradation in efficiency due to significant improvements in construction/design of these filters. The language specified in Rule 1155 is appropriate in this case: all permitted PM control devices shall be operated and maintained in accordance with the manufacturer's operation and maintenance manual or other similar written materials supplied by the manufacturer or distributor of a control device to ensure that the control device remains in proper operating condition.** 8-5
- **With respect to Rule 219 exemptions, request that the specific exemptions of concern in Rule 219 be identified until such time as Rule 219 is revised to prevent any potential confusion. One such concern is whether the exemption for small abrasive blasting units would be eliminated as a result** 8-6

1

of the proposed rule. During the working group meeting, the answer appeared to be no, but the definition of metal grinding raises a concern even for this exemption. 8-6 cont

Please let me know if you have any questions.

Bill Pearce
The Boeing Company
310-200-3155

8-1 Response: Proposed Rule 1430 has been modified to include language from the commenter's suggested definition for both a metal forging operation and metal forging facility. Specifically, the proposed rule has been revised to define a metal forging facility to mean any facility that forms and shapes metals through the use of hammering, pressing, or rolling by heating raw stock, usually in the form of ingots, logs or billets, to its plastic deformation temperature and then shaping to a desired shape and size. Metal grinding, metal cutting, and small part grinding operations related to this process are included in this definition.

8-2 Response: Proposed Rule 1430 does not require small part grinding to occur in a total enclosure. Pursuant to paragraph (d)(1) small part grinding may occur in a temporary enclosure, building or total enclosure. The total enclosure requirements set-forth in paragraph (d)(2) of Proposed Rule 1430 (i.e., formerly paragraphs (d)(2) and (d)(3) in the Preliminary Draft Rule) are limited to metal grinding operations, excluding, small part grinding and metal cutting operations.

8-3 Response: During the rule development process the SCAQMD staff conducted site visits at most forging facilities that will be subject to Proposed Rule 1430. During these site visits SCAQMD staff observed several metal grinding operations that conducted grinding activities a significant distance from the emissions collection hood, resulting in poor emissions capture into the emissions control device and significant fugitive emissions. Therefore, paragraph (e)(5) is intended to ensure that hand grinding, stand grinding, swing grinding and torch cutting are conducted close enough to the dedicated emissions collection hood to maximize emissions collection and minimize fugitive emissions.

8-4 Response: Paragraph (h)(1) of Proposed Rule 1430 has been revised to include a provision that will allow for metal analysis by XRF to identify the level of chromium in the baghouse catch(s) of metal grinding or metal cutting operations. The revised provision is intended to provide source test relief to owner(s) or operator(s) of metal grinding or metal cutting operations that processes metals containing very low levels of chromium.

8-5 Response: Paragraph (h)(4) (i.e., formerly paragraph (i)(3) in the Preliminary Draft Rule) of Proposed Rule 1430 has been revised to allow the owner or operator of a metal forging facility an opportunity to demonstrate a different HEPA performance standard for pressure drops. The revised provision requires the owner or operator to demonstrate the performance standard during the performance test for compliance with the emission limitation for the emission control device.

8-6 Response: The SCAQMD staff has revised the definition of a metal grinding operation in paragraph (c)(17) (i.e., formerly paragraph (c)(18) of the Preliminary Draft Rule) of Proposed Rule 1430 to exclude specific types of metal grinding operations, such as, abrasive blasting and shot peening

Comment Letter #9
City of Paramount
January 19, 2017

City Council
(562) 220-2223

From: Office of the Executive Officer Date: 1/23/17
To: Clerk of the Boards
By: Wayne, Phil, Susan
For your action by: ____ For your info. ✓ handling ✓
For response for: ____ signature, cc: ____

January 19, 2017

Governing Board Members
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

SUBJECT: SUPPORT OF PROPOSED RULE 1430

Dear Governing Board Members:

This letter is in support of Proposed Rule 1430, which deals with toxic emissions, particulate matter emissions, and odors from grinding and metal cutting operations at metal forging facilities. The City of Paramount strongly urges the South Coast Air Quality Management District Governing Board to adopt Rule 1430 when it is presented in March 2017. The requirements of the proposed rule, which include the total enclosure of metal grinding and cutting operations, venting of emissions to emission control devices, cleaning of areas where grinding and cutting takes place, source testing of emission control devices, and installation of bag leakage detection systems, have proven to significantly reduce emissions. 9-1

In particular, the requirements of Rule 1430 were successfully implemented by Carlton Forge, located in the City of Paramount, to reduce emissions. Beginning in September 2013, Carlton Forge began implementing measures now contained in Rule 1430. By the spring of 2015, toxic emissions and particulate matter emissions had dropped "significantly" at Carlton Forge, according to the SCAQMD website. Given the clear correlation between the implementation of these measures and the reduction of emissions at Carlton Forge, we believe that adoption of Rule 1430 is essential to protect the health and safety of people living near forging facilities, employees of forging facilities, and, of course, children attending schools near these facilities. 9-2

While asking that you pass 1430 as quickly as possible, we would also request that SCAQMD complete health assessments and related studies to see if the rule can be even further enhanced eventually in relation to all toxic air contaminants and all emitting facilities. 9-3

16400 Colorado Avenue • Paramount, CA 90723-5012 • Ph: 562-220-2000 • Fax: 562-630-6731
facebook.com/CityofParamount | paramountcity.com | instagram.com/paramount_posts

Governing Board Members
January 19, 2016; Page Two

Again, the City of Paramount strongly urges the South Coast Air Quality Management District to adopt proposed Rule 1430 without any possible delay when it is presented.

CITY OF PARAMOUNT

PARAMOUNT CITY COUNCIL

Daryl Hofmeyer
Mayor

Peggy Lemons
Vice Mayor

Gene Daniels
Councilmember

Tom Hansen
Councilmember

Diane J. Martinez
Councilmember

9-1 Response: The SCAQMD staff appreciates the city of Paramount's support for Proposed Rule 1430. The city of Paramount has been a consistent participant at Working Group Meetings and has very cooperative in providing meeting locations throughout the rule development process so the SCAQMD staff could host Working Group Meetings and the Public Consultation Meeting in the city of Paramount. The SCAQMD staff agrees that implementation of the proposed rule will provide needed emission standards for metal grinding operations at metal forging facilities and will provide greater health protection to residents, students, and workers in the city of Paramount as well as other communities with metal forging facilities with metal grinding operations.

9-2 Response: Many of the voluntary measures that were implemented at Carlton Forge Works to reduce metal particulate emissions from metal grinding operations are incorporated in Proposed Rule 1430. Implementation measures such as point source controls, total enclosures, and increased housekeeping will reduce ambient levels of metal particulate. Monitoring near Carlton Forge Works showed a correlation between nickel levels implementation of measures at Carlton Forge Works where nickel levels declined when measures such as increased air flow, improvements to the total enclosure, and moving grinding activities closer to pollution controls.

9-3 Response: The SCAQMD staff is planning on conducting additional monitoring to better understand if there other emissions sources within the metal forging operation that may be contributing to hexavalent chromium levels. Hexavalent chromium levels are generally below 1 ng/m3, however, levels on individual days have been just above 1 ng/m3. If additional requirements are needed for metal forging operations or another industry category, the SCAQMD will take the appropriate actions to address these emissions.

Comment Letter #10
Almega Environmental
January 25, 2017

January 25, 2017

Mr. Eugene Kang
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765

Subject: Proposed Rule 1430 - Comments

Dear Mr. Kang:

Almega Environmental appreciates the opportunity to submit these written comments regarding the South Coast Air Quality Management District's (SCAQMD) Proposed Rule 1430: *Control of Emissions from Metal Grinding Operations at Metal Forging Facilities.* These comments are made based on the recent Public Workshop presentation on January 19 at the SCAQMD.

Almega Environmental is an SCAQMD LAP certified independent testing company that has provided services in the southland for over 30 years. Most recently have been involved in The SCAQMD Rule 1420.2 rulemaking and testing that was adopted in 2015.

We apologize if some of these comments have been previously addressed, as only recently have become involved in Rule 1430 and may have missed some of the discussion in the past work group meeting. Our comment are as follows:

Comment 1: No Emission Rate Criteria.

The current emission limit are based on concentration (0.01 or 0.002 grains per of particulate matter per dry standard cubic foot). Without an emission rate based on an actual mass basis or corrected for diluent air (as in the NOx corrected to 3% O2 limits) this creates an environment where the limits can be met thru diluting the exhaust air or mixing it with fresh air to bring down the concentrations to the desired level. We do not think that this is one of the desired options that the District would want to inherently be promoting by only have a concentration limit. 10-1

Almega Environmental & Technical Services, 10602 Walker Street, Cypress, CA 90630 Phone: 714-889-4000

Comment 2: No "di minimis" Criteria for Exempting Low Polluters.

The relative significance of low polluters versus high polluters does not seem to accounted for sufficiently. An 80,000 scf blower venting a building full of grinding operations would have the same limit (gr/dscf) as a single grinder being vented in a fume hood with 200 scf blower, although one could be emitting 400 times more emissions. At some point the emission rate of the smaller operation should be considered so low as to be exempt from portions of the rule.

In (e)(3) you do allow for smaller operations to comply by using only a 98% control device instead of the costlier 99.97% HEPA which would be helpful to the smaller facilities.

But we think we may be able to take it one step further. In (e)(3)(C) it is stated that the if the uncontrolled emissions are less than the screening levels in Table I of Rule 1401 (New Source Review of Toxic Air Contaminants) that the facility would only need to comply with only the 98% control criteria. We would ask why would any control device be required if they met the standard Rule 1401 screening level criteria. This could be the di minimis criteria for installing a control device.

We believe that the collection/housekeeping management of the emissions is still an important part of the rule, and without these considerations the actual emissions would be difficult to quantify.

The "di minimis" alternative may be to keep the collection/housekeeping aspect of the rule and then just perform a periodic check (every 3 years ??) to make sure the facility is still under the Rule 1401 screening levels (1:1,000,000). If they exceeded these levels, then the next stage, 98% or 99.997% controls, could be required. This would also incentivize the facilities to self-control the emissions to keep below that threshold.

10-2

Comment 3: Maintain No Efficiency Test Requirement

Currently there is no provision in the Rule to test the installed control devices for efficiency. We agree with this direction and do not want to be put into a situation where we need to show a 99.97 efficiency across a HEPA. The inlet loading of the control devices would need to in excess of 16000 mg in a Method 5 train to show a 5 mg catch weight with a resultant 99.97% efficiency. This is not practical.

10-3

Comment 4: Defined Multiple-Metals scope

Method 436 states

> "This method applies to the determination of aluminum (Al), antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), phosphorus (P), selenium (Se), silver (Ag), thallium (Tl), vanadium (Vn) and zinc (Zn) stack emissions from stationary sources."

10-4

Please confirm that the testing scope will be isolated to just these metals, or will they be subject to possible additions based on the process and materials used.

Also, we request that Mercury be excluded from the standard scope of testing unless Mercury is utilized by the process. Where all the other metals are collected in the same "fraction" of the sampling train, the Mercury aspect of the testing adds an additional absorbing solution and fraction that adds equipment, manpower and a cost burden that should not be incurred if not needed.

10-5

Thanks for your considerations,

Charles M. Figueroa
Senior Project Manager
Almega Environmental & Technical Services

Cc: Dan Garcia, SCAQMD
Susan Nakamura, SCAQMD

Almega Environmental & Technical Services, 10602 Walker Street, Cypress, CA 90630 Phone: 714-889-4000

10-1 Response: The emission standard under Proposed Rule 1430 is based on Rule 1155. The Rule 1155 emission limit of 0.01 gr/dscf was reduced to 0.002 gr/dscf based on the emission limit that was achieved by a baghouse with HEPA for a metal grinding operation.

10-2 Response: SCAQMD staff has performed multiple site visits at metal forging facilities observing multiple types of metal grinding or metal cutting being present. Metal grinding or metal cutting operations done under a continual flood of metal removal fluid were observed to have minimal emissions. As such, these operations are not included in Proposed Rule 1430. Other metal grinding or metal cutting operations can have an additive effect where smaller operations can be produce emissions equivalent to larger operations depending on the amount of grinding or cutting stations, duration of operation, or frequency of operation. These observations have made it necessary to include smaller operations to be vented to an air pollution control device. Effective control of emissions via an air pollution control device reduces metal particulates that can become fugitive.

10-3 Response: SCAQMD staff acknowledges the comment. Manufacturers of HEPA systems will certify the product to ensure that the system meets the 99.97% control. Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters allows the operation of applicable equipment without a field certification of emission as long as it has been certified by the manufacturer.

10-4 Response: CARB Method 436 allows the "extra" impinger for Mercury to be removed from the train, if there is no Mercury in the process. PR 1430 requires the submission of a source test protocol. The owner or operator of a metal forging facility may propose to not include the impinger for Mercury in the protocol. SCAQMD staff will evaluate the necessity to test for Mercury on a case by case situation.

10-5 Response: Please refer to response to comment #10-4.

Comment Letter #11
Lisa Lappin
January 19, 2017
(Email addresses are not shown to protect the privacy of email recipients)

Rule 1430_language of odors
From: Lisa Lappin [ljtutoring@gmail.com]
Sent: Thursday, January 19, 2017 12:13 AM
To: Cher Snyder; csynder@aqmd.gov; Susan Nakamura
Cc: Jane Williams [redacted]; Robina [redacted]; michele lewis [redacted];
Laurie Guillen [redacted]; Ramona Guillen [redacted];
Magdelena [redacted]; Ericka Martinez [redacted];
Jo A Arias [redacted]; Jose [redacted]; Central Thirteen [redacted];
Karina Espinosa [redacted]; Rachel Uranga [redacted];
Rebecca Plevin [redacted]; Tony Barboza

Dear Ms. Nakamura and Ms. Snyder,

This email is a follow-up to the call I made to both of you immediately following the 4th working group meeting regarding rule 1430 wherein there was some debate as to whether reducing odors should be included in the goals/objectives of rule 1430. I would like to reiterate in writing what I expressed verbally to both of you by phone the day after the workshop: community residents, homeowners in Paramount, and I strongly assert that the language of 'odor control' in the stated goals and objectives of rule 1430 remain as it was originally proposed at the outset of grinding meeting #4 in the draft by Ms. Nakamura. Although I stated at the meeting that I would prefer to see the language of odor removed from the goal/objective if fighting to keep it in opposition to protests from the Metal Lobby would cause rule 1430 to be postponed, I have since spoken with community members who are in disagreement. They are concerned that ongoing odors will not only decrease the value of their property but will more importantly continue to bother their children as they play in their yards and schools including Lincoln, Gaines (elementary and preschool), and Jackson Middle School. Concerned Paramount Resident members and members of the Paramount Community Coalition Against Toxins and myself all want to odor reduction to remain a critical component of the goal of rule 1430. 11-1

We also want to see the wording of 'odors' remain in the signage posted outside the 5 forging companies in Paramount as well as other forging companies in Southern CA. If the wording on the posted sign includes a warning to call SCAQMD regarding 'Air Quality Concerns' we would like to see this vague language explicated with specific examples such as "Report Air Quality Concerns including odors, dust, and smoke to 1 800 CUT SMOG." We do not think that the phone number of the company should be included on the signage as that could lead to confusion as to who is in charge of monitoring these concerns. We suggest that the signs be bilingual in the language that is used predominately in each community in addition to English. 11-2

According to the LA Times article written by Tony Barboza, there have been 350 calls complaining of odors in Paramount since 2011 with over 50% of them from metal companies. Last week 9 teachers from Gaines School called in complaining of an odor that was not verified so no public nuisance violation was issued. Six teachers from Lincoln School called on Friday and 3 from the same school as well as other residents last Wednesday. Something must be done to reduce this continual nuisance and injustice. That is why is it so important that rule 1430 retain this language.

11-3

Thank you for considering our concerns.

Lisa Lappin

11-1 Response: The purpose of Proposed Rule 1430 still includes reducing odors. In addition, contingency provisions have been added to require facilities to begin implementing odor reducing measures after five confirmed odor complaints that are associated with their metal grinding or cutting operations.

11-2 Response: The wording of the signage have been revised to state, "TO REPORT AIR QUALITY ISSUES SUCH AS ODORS, DUST, OR SMOKE FROM THIS FACILITY, CALL EITHER THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG OR [*FACILITY CONTACT PHONE NUMBER*]."

11-3 Response: Please see response to comment #11-1.

Comment Letter #12
Lisa Lappin
January 19, 2017
(Email addresses are not shown to protect the privacy of email recipients)

From: **Lisa Lappin**
Date: Thursday, January 19, 2017
Subject: Proposed Changes to Rule 1430 to safeguard children
To: Susan Nakamura <snakamura@aqmd.gov>, Cher Snyder [redacted],
Joe Lyou [redacted], Robina Suwol [redacted], Jane Williams [redacted],
Cynthia Babich [redacted], Rebecca Plevin [redacted],
Rachel Uranga [redacted], "Barboza, Tony" [redacted],
michele lewis [redacted], Central Thirteen [redacted], [redacted],
[redacted], Laurie Guillen [redacted], Jose [redacted]

Dear Ms. Nakamura,

Thank you for working so hard on rule 1430 over the past years. Although the rule is strong in some regards and will help protect public health, I would like to see some revisions made that will strengthen it further for the sake of school children and residents in the low-income communities where many of these forging companies are zoned. One revision which seems critical for public health of children living near forging companies (who play in the dirt outside their homes and put it inadvertently into their mouths through touch) is that the distance of sensitive receptors be expanded from 300 ft. to 500 ft. This distance is underpinned by the CARB Land Use Planning Handbook and is necessary to protect the health of children and the elderly, the most vulnerable of our society. This is also critical to safeguard patients in hospitals whose breathing is compromised. If the distance is extended from 300 to 500 ft., four public schools that would have been excluded from the benefit of additional protective measures would be safeguarded including Lindberg Elementary, Firth Rixson, Longfellow, and Robert F. Kennedy School, zoned just 70 feet beyond the current 300 ft. regulation. 12-1

Secondly, I strongly support Robina Suwoll's proposal at rule/grinding meeting #4 that preschools, day care centers, Head Start Programs, and other educational settings for children 0-5 that are not located on public school grounds be considered in the category of schools rather than sensitive receptors with the additional footage requiring additional protective measures including negative air with Hepa filtration. It is imperative that settings for children aged 0-5 (the most vulnerable of all ages) not be omitted from the provision requiring that extra protective measures be required on forging companies grinding in their proximity. 12-2

Lastly, as an educator for 25 years and an advocate for children, I strongly propose that the distance of 1,000 ft. discussed in the paragraph above be extended to 1,500 ft. to provide additional protective measures be required on forging companies that grind within 1,500 ft. of 2 elementary schools that will be exempted from this provision as the draft is currently written. These schools include: Vernon City School which is zoned 1437 ft from Ajax Forge and Ann St. Elementary zoned 1100 ft. from CA Drop Forge. Given the environmental injustices that the children of Vernon have endured since birth as a result of Exide Battery Plant, I trust that SCAQMD, the community of Vernon, environmental activists, a sympathetic public, legislators, and even the Metal Lobby would understand the need to extend the distance from 1,000 ft. to 1,500 ft. to protect these children as well as the children at Ann St. Elementary. It seems unjust that they would be prevented this additional safeguard because of a 100 ft. additional distance. The following CA Education Code underpins the need for this extension, requiring a distance of one quarter mile between proposed schools and sites that emit toxins (1320 ft.). "The LEA shall consult with the administering agency and the local air pollution control district or air quality management district to identify facilities within a quarter mile of the proposed site that might reasonably be anticipated to emit hazardous air emissions or handle hazardous materials, substances, or wastes and shall provide written notification of those findings." (See Education Code Section 17213(b) and Public Resources Code Section 21151.8(a)(2).) An additional 180 ft. is not an unreasonable request.

As discussed at grinding meeting #4, metal lobbyists and environmental lobbyists could easily find common ground on creating legislation that would prohibit schools and programs for children 0-5 from being zoned in the future within 1,500 ft. of companies using toxic materials including forging companies. In fact, a precedent already exists.

Thank you for your attention to these concerns. I look forward to continuing to work together to find a rule that safeguards the children of SCAQMD basin and one that will serve as an example to other regions and states.

Sincerely,

Lisa Lappin

12-3

12-1 Response: Proposed Rule 1430 has been modified to require facilities that are within 500 feet to install negative air for their total enclosure.

12-2 Response: Proposed Rule 1430 has been modified to require facilities that are within 1,000 feet of a school, pre-school, early Head Start or Head Start program to install negative air for their total enclosure.

12-3 Response: The SCAQMD staff is sensitive to schools that are in impacted areas, such as Vernon Elementary School. Extending the distance from 1,000 to 1,500 feet will have little impact on this school. The greatest reduction will be the pollution controls for the grinding stations and the total enclosure. Adding the negative air to the total enclosure will provide an additional benefit to ensure fugitive emissions are contained within the enclosure, with the benefit to receptors that are at a much closer distance than 1,000 feet. Pursuant to the CARB handbook, there are multiple references to utilizing a 1,000 feet of separation between distribution centers, rail yards, and chrome platers. ARB's 2002 Barrio Logan Study measured concentrations of hexavalent chromium in the air. Results indicated that over 90 percent risk reduction occurs within 300 feet. Less than 10 percent risk reduction is achieved beyond the 300 feet, and much less beyond 1,000 feet. CARB's recommendation for siting new sensitive land uses within 1,000 feet, is a precautionary measure. Establishing the requirement for negative air for schools, preschools, pre-head start, and head start programs that are 1,000 feet of a metal forging facility is health protective.

Response to Comment #13
Julia Clabault
December 8, 2016
(Email addresses are not shown to protect the privacy of email recipients)

From: Julia Clabault [redacted]
Sent: Thursday, December 8, 2016 5:12 PM
To: Daniel Garcia <dgarcia@aqmd.gov>; Barbra Lee [redacted]; Secretary Roriguez [redacted]
Subject: EPA Agencies Performing

Mr. Garcia,

I am including the director and the secretary of EPA in this email correspondence out of frustration of you Mr. Garcia, NOT responding to any emails that I have sent you even though you are the contact person on outbound memos concerning Paramount City pollution problems, I also would like the director and secretary to be informed and respond to this letter I am taking the time to write concerning AQMD, The Health Department, and DTSC, and working together to with city officials and community members to address enviormental concerns in a timely manner. There seems to be no accountability.

AQMD higher officials have failed to responded to emails (Derrick Alarorre, Wayne Nastri, Jason Lowe to name a few) regarding concerns about the city of Paramount resident's request for AQMD to go door to door to issue STOP WORK orders until companies can operate safely assuring the community they are no longer contributing to distributing toxic cancer causing debris (e.g. Chrome 6) We have patiently and repetitively been asking AQMD to address these concerns since 2012 when they continued to get regular high readings when doing test samples, after they had supposedly addressed Carlton Forge pollution violations.

AQMD was taken four years of taking samples and receiving the SAME data indicating a spike in Chrome 6, and have done nothing to work with city officials to pull all business licences and commence immediate door to door inspections. I called and request air sampling be completed by AQMD in 10/2016 on my property because AQMD complained they could not figure out or get permission to establish more testing stations. John Akers and Michael Pua dropped off clear plastic boxes with test plates and NEVER followed up with any results. More test plates were dropped off and never picked up (Yes. I still have the plates as proof). Cher Synder had no follow through in ensuring her staff would complete the task of picking up the plates and delivering test results.

The Health Department was never notified from AQMD of the any readings in the past years that were not in safe range, and to date still have produced not flier sent to residents homes providing information on the precautions that the community should take to limit exposure. After filing a EPA report and many more emails unanswered from Dr. Rangam, I reached Carrie Tayour, Health Department, who committed to coming to my property to take a soil sample due to my fear of the black fine dust which sparkled under sunlight that was collecting on my white patio pad could be Chrome 6 which could also be seeping into my ground water. Carrie and Michael Jordan sent announced to my house the day before Thanksgiving 11/23/16 John Ferrer, Industrial Hygeienst, and Renor Mayshack to take a scan of my soil. Both Carrie and Michael promised this was the first step and than a lab soil test would be completed. Carrie also stated in an email she would follow up with me on what the soil reading were to explain them to me. She never did follow up explaining anything nor came back to take a soil test to have a lab asset the sample. NO ONE is answering where is all the Chrome 6 going when it is not staying in the air?

This is appalling. There is NO ACCOUNTABILITY for any of these agency to be held responsible to be responding in a timely manner to address issues and fix problems. NONE of these agencies are even talking and working with one another. The Health Department should have been notified years ago when AQMD got reading about unsafe levels that the residents were being exposed too. All these big salary positions sponsored by our tax payers money and no one is working too hard, and Wayne Nastri is publicly stating in the LA TIMES "...no other agency would be moving this fast to address the issue". That horse's ass. I wish he had to live here and have his children breath what we have to breath due to his lack of action every day. Sam Atwood is stating "No immediate threat and people do not have to leave their homes". Again you come live here and try to resume normal life with your windows open or try sitting outside on your patio to read a book or conduct outdoor activities and feel safe when you have cancer causing toxic particles in the air leaving you with a soar throat daily.

13-1

We the residence of Paramount City are appalled by EPA agencies (AQMD, HEALTH DEPARTMENT, and DTSC) lack of professionalism. These agencies are not being supervised or held accountable to perform. They are not working cohesively
to identify the sources and immediately issuing STOP WORK orders until these companies can prove they are in compliance. This is profit over wealth. You would not allow a restaurant to continue to serve food that is causing illness to people, so why are you not moving to promptly and swiftly to stop the toxic out bursts and have transparency with data logs posted on the Internet of what your agencies are doing daily to inspect and limit business licenses so you are not having to high of a concentration industries in one small area ?

Paramount City is only five square miles and 50,000 people. How many metal business do you have here operating?

Most recently, ONLY two businesses here in Paramount, Anaplex Corporation and Aerocraft Heat Treating Company have been sited by AQMD in the last four years.

We were wondering when are you going to address all other possible businesses polluting our air?

Why are you NOT pulling all the licenses and inspecting other possible contributors of this poison and immediately issuing STOP WORK ORDERS NOW?

The Paramount Refinery (burning oil creates Chrome 6) why is this not being inspected?

We want the Medical Waste Company (no other city would give permit too) inspected, as well from the Health Department.

Why are these agencies not being inspected at the intervals and transparency to the public similar to businesses serving food with posted letter grades on the outside of the building indicating last date inspected and clearance codes indicated?

13-1 cont

Mr. Garcia you have not responded to emails these are the problems we see with your draft for next steps for AQMD.

You have now taken a MONTH to write a proposal for grinding operations that could have been written in a few days. SET A DATE and ENFORCE the plan NOW and REVISE as needed. We are tired of your weekly TOWN HALL MEETINGS which AQMD continues to refuse to send out mailings to homes to include all residents, so only few people even know about the meetings. We are predominantly Spanish and I had to complain to the City Manager, John Moreno that AQMD has nothing printed in Spanish. You also run meeting and provide no ones name or contact information for further questions to be addressed. That is so unprofessional and unethical as well.

13-2

HERE ARE OBJECTIONS TO PROPOSALED RULE 1430
ALL CENTERED AROUND LITTLE to NO ACCOUNTABLITY FOR AQMD TO SET REASONABLE TIME LINES AND MAINTAN A SCHEDULE OF REGULAR INSPECTIONS WITH POSTED RESULTS TO THE PUBLIC

1. No Rule Adoption Date
AQMD refuses to state an action time line for the proposal. 30 more days later we have endured yet another month of toxic exposure. AQMD proposal has compliance dates all set to 60 to 90 days with 1 year to 4 year source test emissions completed not by AQMD, but the owner. A schedule needs to be adhered to by AQMD similar to restaurant inspections where the clearance for safe operations is posted on the front of the building indicating last day inspected by AQMD and their rating (e.g. A, B. C)

13-3

2. AQMD filed a proposed order that COULD shut the companies down if no remedy is made to fix the situation. Yet AQMD needs some district administrative action that must first be considered by an independent body to have it enforced.

3. WHAT? Shut the business down NOW till they can prove to run safely. PERIOD

13-4

*No later than 12 months for the Date of the Rule Adoption operations for grinding are to be conducted in an enclosure. NOT ACCEPTABLE this is a year from now.
(A) Conducting grinding in a temporary enclosure NOT ACCEPTABLE This is not even defined what that would look like, but could be interrupted that tarps could be set up in the shape of cube would be acceptable. NO Temporary Structure should be

13-5

(6) The owner only needs to do inspections once a month. NOT ACCEPTABLE each shift should be responsible to for testing to make sure it is safe to proceed.

13-6

(7) Must fix repairs and leaks with in 72 hours NOT ACCEPTABLE If there is a leak all operations must STOP until repaired.

13-7

(8) 12 months after adoption of the RULE facilities must conduct a metal grinding test if they are within 300 ft of the sensor NOT ACCEPTABLE This should not take 365 days for this to be implemented and it should be mandatory for all businesses to conduct this test regardless of sensor location.

13-8

(e) Metal Grinding Emission Requirements
(I) No later that 1 year of Adoption of the Rule facilities shall vent emissions NOT ACCEPTABLE Business should not be able to operate until they are properly vented and clearly this should not be accepted that they have a year to comply.

13-9

(f) Housekeeping Requirements
30 days from Date of Adoption (this date is never set by AQMD) owner shall control conducting all following housekeeping procedure NOT ACCEPTABLE AQMD is NOT writing in the proposal any accountability for themselves in this proposal. We need regular follow up inspection by AQMD with transparency to the community of the findings posted outside the buildings. This is the only way to have checks and balances in place to ensure businesses are operating safety and that AQMD is doing their jobs.

We also need to see what are the consequences and fines for any violations. That is not in the proposal to even ensure accountability.

13-10

Maintenance and Repair Activity Requirements

30 days from Adoption of Rule NOT ACCEPTABLE STOP ALL WORK UNTIL BUSINESSES CAN OPERATE SAFETLY!!!!!!!!!!!!!!!!

(1) (A) Source test for PM emissions once every 12 months NOT ACCEPTABLE This should be done bi-weekly.
(B) Source test for hexavalent chromium and multiple metal emissions tested every 48 months NOT ACCEPTABLE That is every 4 years you are testing for this. That is crazy! Again this should be bi-monthly.

13-11

(2) 0-90 day for pre-test protocols for source tests provided to Executive Officer (Who is this Executive Officer?)NOT ACCEPTABLE Time lines to comply are months away when they should be at best a few weeks away.

13-12

(10 Tests must be completed by SCAQMD laboratory Approval Program unless excused by the Executive Officer to have testing done at another lab. NOT ACCEPTABLE
There is no established set time frame for when the tests will be completed, or where the data will be posted for public review, and their should be only one point person that is handling testing and that should be AQMD.

13-13

(13) 60 days or 2 months to submit testing reports NOT ACCEPTABLE time line. It should not take 2 months to complete the report. 13-7 cont

Monitoring

(4) Periodic smoke test shall be conducted, unless this presents an unreasonable risk to safety every 3 months NOT ACCEPTABLE AQMD is not even stating what is considered "unreasonable risk" so they are unable to hold anyone accountable for not conducting the smoke test because unreasonable risk would be subject to interruption. 13-14

(F) Log of reports regarding odor, date and time of occurrence, name of person filing the complaint, and how it was resolved should be kept. NOT ACCEPTABLE
Who is keeping the log the owner? Come on where is AQMD to step in and establish accountability for logging occurrences and have transparency to the public of their inspections? 13-15

(K) Sinage
1 800 CUT SMOG
NOT ACCEPTABLE We want AQMD to take some responsibility in having regular inspections completed with posted results on the outside of the building just like the ones that restaurants have indicating the facilities are clean and when they were last checked. 13-16

Permit Application
60 Days from Rule Adoption
NOT ACCEPTABLE AQMD can make some more money collecting permit application fees. We the citizens of Paramount want AQMD to be more active in personally doing inspections and posting results on the outside of the building last day inspected and rating for how clean the facilities are. AQMD has too many bloated big salary people on tax payers pay role and this agency is not performing. 13-17

Please give me the email address to Gina McCarthy from EPA. I am having a hard time locating her contact information.

Paramount residents want the report made public from DTSC that was projected to take 2 years for them to complete and promised done by Oct 2016 which was suppose to give an update on contaminant (e.g. LEAD) that they had discovered.
We want the Health Department to provide notice to schools and the community of health precautions to take to limit the exposure of hexavalent chrome. We want AQMD to do door to door inspections and issue stop work orders until they can operate safety.

Julia Clabault

13-1 Response: Thank you for your concerns about the city of Paramount. In previous emails to you, staff has informed you about our Expanded Monitoring Efforts for Hexavalent Chromium in the city of Paramount. The SCAQMD has been working with various agencies to investigate facilities and address the high levels of hexavalent chromium found in late October. The SCAQMD updates information on the investigation, monitoring data, enforcement actions, information for an informational weekly call for the public that you can obtain from our website at: http://www.aqmd.gov/home/regulations/compliance/air-monitoring-activities

13-2 Response: Developing a new rule or regulation takes time to study the affected sources, pollution controls, and develop a proposal. The SCAQMD staff works with a stakeholder group that includes representatives from the community, environmental groups, affected industries, and agencies. Through the rule making process, the SCAQMD staff will visit affected facilities to understand their existing operations. Sources regulated under Proposed Rule 1430 are currently unregulated and so the SCAQMD had

very little information about the affected facilities when the rulemaking process began.

Regarding providing information for the Expanding Monitoring Efforts for Hexavalent Chromium in the city of Paramount, much of the material distributed at the town hall meetings was translated in Spanish. In addition, there has been a Spanish translator at all off the town hall meetings and on the weekly informational call to update the public on the Expanded Monitoring Efforts.

13-3 Response: Proposed Rule 1430 is scheduled for a public hearing on March 3, 2017. Upon rule adoption, affected facilities must meet specific provisions and compliance deadlines. Beginning date of rule adoption outdoor at metal forging facilities and certain housekeeping measures must be implemented. Numerous compliance deadlines for additional requirements follow these initial requirements. For details on additional requirements and compliance deadlines refer to Proposed Rule 1430 dated February 1, 2017.

13-4 Response: ~~The SCAQMD currently lacks the authority to shut a facility down, however, in t~~The signed Stipulated Order for Abatement for both Aerocraft and Anaplex, there are provisions in which each facility is required to curtail their chrome emitting operations if the SCAQMD's monitor is greater than 1 ng/m3 averaged over the most three recent valid monitoring results. Please visit SCAQMD's website on Paramount Ongoing Air Monitoring Activities at: http://www.aqmd.gov/home/regulations/compliance/air-monitoring-activities

13-5 Response: Facilities need sufficient time to construct a total enclosure, if they are currently not conducting metal grinding operations within an existing building. The proposed rule defines "temporary enclosure" to be structure comprised of a floor, roof, walls, and or partitions on at least three sides or three quarters of the perimeter that surrounds areas where metal grinding or metal cutting operations are conducted.

13-6 Response: These inspections are for the building enclosure. These will be physical structures that deterioration should be minimal, if any. Proposed Rule 1430 requires that monthly inspections be conducted to ensure that the structure is free of cracks, breaks, etc. Monthly inspection ensures that these enclosures are well maintained and is proactive to ensure that if there is an issue it can be fixed before it becomes a larger issue.

13-7 Response: Thank you for your comment. Staff added the following language in Proposed Rule 1430:

The owner or operator of a metal forging facility shall immediately stop metal grinding and metal cutting operations if inspection of a total enclosure where these operations are conducted reveals a break, crack, gap or deterioration which results in fugitive metal dust. The owner or operator may resume metal grinding and metal cutting operations until the total enclosure is repaired pursuant to paragraph (d)(7), or if temporary measures are implemented that ensure no fugitive metal dust results from the break, crack, gap or point of deterioration.

13-8 Response: It appears that the ~~commentor~~commenter is concerned that the facility has 12 months to build a total enclosure with negative air. 12 months is an aggressive schedule. It takes time for the facility to complete their engineering and design, submit permits, begin demolition and construction, then installation of the pollution controls for the total enclosure with negative air.

13-9 Response: Please refer to Response to Comment #13-8. Most facilities do have their emissions vented to a baghouse. However, Proposed Rule 1430 will require that the baghouse meets specific emission standards as well that it is designed with the proper air flow to ensure that the emissions are being appropriately collected.

13-10 Response: We use that language as a place holder for when the rule is adopted. We are working towards an adoption date of March 3, 2017.

13-11 Response: A source test is an extensive testing procedure to quantify the emissions from the stack. The cost per stack can be $5,000 per test for PM and $7,500 per test for multi-metals or for a hexavalent chromium source test. It is not reasonable to require this type of testing weekly or bi-monthly.

The proposed rule does require a series of parametric monitoring requirements such as a bag house leak detection system, measure the pressure across the HEPA filter, and conducting a smoke test. All of these monitoring techniques provide additional information on the performance of the air pollution control device and ensures proper operation.

13-12 Response: The term "Executive Officer" to refer to SCAQMD staff. The pre-test protocol is to be submitted as the affected facility gets closer to installation of the permitted pollution control equipment.

13-13 Response: This provision requires that the operator use a test laboratory to analyze the source test results that is approved under the SCAQMD Laboratory Approval program. The tests which are referenced are the source tests under paragraph (h)(1). Compliance dates for initial source tests are specified in subdivision (h).

13-14 Response: Appendix 1 of Proposed Rule 1430 sets-forth clear procedures for the smoke test requirements in subdivision (i). For example, section 3.1 of Appendix 1 requires that the owner or operator evaluate any potential physical hazards to ensure that the smoke test is conducted in a safe manner.

13-15 Response: Proposed Rule 1430 establishes specific recordkeeping requirements for odor contingency measures and monitoring requirements. At any given time, these records are subject to inspection by the executive officer to determine compliance with the proposed rule. These records are in addition to records maintained by the District for other applicable SCAQMD rules, such as, Rule 402-Nuisance.

13-16 Response: SCAQMD staff is proposing that metal forging facilities subject to Proposed Rule 1430 comply with specific signage requirements. Please refer to subdivision (k) of the proposed rule for these signage requirements.

13-17 Response: Proposed Rule 1430 provides a brief window of time to allow existing forging facilities with metal grinding or metal cutting operations an opportunity to implement a compliance strategy (i.e., determine appropriate air pollution controls) for the proposed rule. For example, during this time a facility would determine the adequate controls needed to comply with the rule requirements and submit all necessary permit applications. Although this brief window of time is provided for facilities to submit permit necessary permit applications it is important to emphasize that the proposed rule will immediately prohibit outdoor metal grinding and metal cutting.

Response to Comment #14
Sierra Alloys
January 27, 2017

SIERRA ALLOYS
TSI TITANIUM
PRV Metals Companies

5467 Ayon Ave Irwindale Ca 91706

Ms. Susan Nakamura
Acting Deputy Executive Director
SCAQMD
21865 Copley Dr.
Diamond Bar, Ca 91765

January 27, 2017

Re.: **Revised approach to compliance with Rule 1430**

Based on the analysis of the bag house dust collected by SCAQMD, which shows little to no detectable traces of toxic particulate and the bullets listed below, Sierra Alloys would like to propose a revised approach to compliance with proposed rule 1430.

- **Review of Analysis**
  - Levels of Toxic elements are non-detectable or very, very low
  - Aluminum: OSHA set a legal limit of 15 mg/m3 (total dust) and 5 mg/m3 (respirable fraction) aluminum in dusts averaged over an 8 hour work day
    - Sierra Alloys proposes to run a study to determine the levels of total dust
  - Titanium: Titanium is non-toxic

  } 14-1
- **Additional Observations**
  - Sierra Alloys participates in Storm Water Monitoring and has never been sited or identified as a source of high levels of pollutants or toxic materials run-off. Further, one of the locations where storm water has to be collected is in the grinding area.
  - Sierra Alloys is located in a heavily industrialized area where the closest Sensitive Receptor is greater than 1000 feet away (closer to ½ mile)
  - Sierra Alloys Alloys is surrounded by other industries that potentially generate significant toxic emissions. These are:
    - Davis Wire
    - Matheson Gas
    - Veolia Chemical Treatment Facility
    - Miller Brewing Company
    - Waste Management
    - Burtec
    - Several Auto Body Shops
  - Sierra Alloys forges titanium products which has been established is non-toxic to humans. As a matter of fact, at least 2 of the alloys processed by Sierra Alloys are used in knee and hip replacements for humans. These are T6Al4V and T6Al4VELI.
  - Nickel bar forged at Sierra Alloys is never ground due to the starting stock.

  } 14-2
- **Additional Actions To be Taken by Sierra Alloys Alloys**
  - Wet sweeper has been purchased and is in use 2 times per day
    - Sierra Alloys will begin logging these activities.

  } 14-3

5467 Ayon Ave Irwindale Ca 91706

- Sierra Alloys has contacted our bag house contractor to:
  - Enclose bottom section of bag house
  - Install leak detection system
- Sierra Alloys proposes:
  - compliance with Section h of proposed Rule 1430 (Source Test)
  - compliance with Section i of proposed Rule 1430 (Monitoring)
  - compliance with Section j of proposed Rule 1430 (Recordkeeping)
- Sierra will be purchasing conditioned billet in lieu of converted ingot.
  - This means that Sierra Alloys will be changing the form of its incoming raw material to reduce overall grinding dust by approximately 33% (or more).

14-3 cont

- Signage
  - Due to the industry located in and around our facility, Sierra Alloys is requesting that this requirement be waived.

Sierra Alloys is requesting that SCAQMD closely consider these observations as part of the development and/or implementation of Rule 1430. Sierra Alloys agrees that every industry needs to take the necessary actions to ensure protection of the citizens and the environment and has actively taken steps to do so. Finally, Sierra Alloys believes that based on the analysis of the bag house dust, the actions already taken and the proposed actions outlined in this letter, we can continue to protect our workers, our citizens and the environment and serve our industry in the best possible manner.

14-4

Mike Martinez
Product Development Mgr.
Sierra Alloys

cc.: Craig Culaciati CEO-PRV Metals (President Sierra Alloys)

14-1 Response: The commenter stated that based on baghouse dust collected and analyzed by SCAQMD staff the levels of toxic elements are non-detectable or very low, however, the lab analysis results of dust collected from the baghouse catch demonstrate nickel levels at nearly 17 times above the limit of detection. Nickel is considered a toxic metal. Also, based on glass plate samples taken at other metal forging facility's that process titanium SCAQMD found the presence of metals that are toxic air contaminants such as nickel, arsenic and cadmium.

The OSHA limits mentioned by the commenter are the Permissible Exposure Limits established by OSHA, however, these limits pertain to worker exposure levels intended to achieve worker safety objectives that are distinct from the purpose of PR 1430.

14-2 Response: SCAQMD staff is aware that Sierra Alloys is in a heavily industrialized area and that the closest sensitive receptor is over 1,000 feet from the facility. Proposed Rule 1430 is designed with point source requirements specific to the type of metal grinding operation(s) at the facility and enclosure requirements based on the proximity of the facility to a sensitive receptor(s) (e.g. residences and schools). Since Sierra Alloys is located over 1,000 feet away from the nearest sensitive receptor the facility is not required by PR 1430 to install a total enclosure with negative air that is vented to air pollution controls.

SCAQMD staff recognizes that facilities located near PR 1430 affected facilities are also potential emissions sources. In-fact all six of the nearby facilities identified by the commenter have SCAQMD permits. Regarding comments pertaining to titanium and nickel alloys processed by Sierra Alloys please see response 14-1 above.

14-3 Response: SCAQMD staff is encouraged by the actions implemented by the facility toward compliance with PR 1430. SCAQMD staff emphasized at a meeting held with the facility on February 1, 2017 that it is important to review all provisions of the proposed rule to ensure compliance upon rule adoption.

Regarding signage, the signage requirements in PR 1430 were added based on input that SCAQMD staff received at multiple public meetings. For additional information related to the signage requirements see responses 3-11, 5-8, 11-12, 13-16, PWS-3, and PC-6.

14-4 Response: An analysis conducted by SCAMQD staff of baghouse catch samples taken from the swing grinding operation at Sierra Alloys demonstrated the presence of Nickel that is a known toxic air contaminant. For additional details about the results from this analysis see Response 13-1 above. The results of the analysis combined with substantial information gathered from metal grinding and cutting operations at metal forging facilities by SCAQMD staff support the need for actions beyond those outlined in the commenter's letter, including, Proposed Rule 1430.

Response to Comment #15
Associates Environmental
January 27, 2017

From: Ricardo Flores <rflores@associatesenvironmental.com>
Sent: Wednesday, February 8, 2017 6:05 PM
To: Daniel Garcia
Subject: PR 1430

Hi Dan

I have the following questions related to PR 1430 dated February 1, 2017.

1) PR1430(n) – The proposed rule will require that existing grinding equipment and associated controls seek a permit. The SCAQMD has recognized that existing equipment is exempt from permitting. Since the equipment will loose its exemption, will it be subject to Rule 212, Regulation XIII (NSR), Rule 1401 and Rule 1401.1. Also, will this equipment be required to be submitted within 60 days of rule adoption. 15-1
2) Definition of Maintenance & Repair: Could this be extended to general maintenance activities. I have someone who has a torch cutter that is used for maintenance activities and not to cut parts for production. I think this equipment should be excluded from the control requirements of the rule. 15-2
3) Requesting an exemption for Torch cutting used for maintenance activities and not for cutting ingots. 15-3
4) PR1430(d)(2) – Can you add language that a facility could petition to the EO for additional time if there are some unforeseen delays in the modification/construction of the total enclosure. 15-4
5) PR1430(d)(8) – Does "the property line of the facility" include properties owned by the facility which are adjacent (or across the street) to the main manufacturing facility. 15-5
6) PR1430(g)(2) – Who determines when wind speeds hit 20 mph? 15-6
7) PR1430(h)(1)(C) – Would the District consider the average of all samples collected within a 48 month period to satisfy this requirement. If one sample shows a chromium value greater than 1%, is the facility stuck to testing every 48 months or could they still sample in the future and analyze for chromium to demonstrate its results are less than 1%. 15-7
8) PR1430(i)(1) – Rule 1155 does provide a rule exemption, except to R1155(d)(1), to dust collectors equipped with HEPA filtration. 15-8
9) PR1430(i)(3)(D) - Is the averaging period on a rolling 4 hour average or 4 hour blocks? 15-9
10) PR1430(k) – Does each entrance mean all entry points. A facility may have a main office that has foot traffic. The facility may have multiple driveways around the perimeter of the facility. Also a facility may have adjacent buildings where no grinding or metal cutting occurs. Could you please clarify where signage would be required. 15-10
11) The District has not provided an exemption for low use grinding equipment. It's difficult to accept that a grinder that is used infrequently needs to meet the same requirements as grinders that are being used daily. The cost doesn't make sense. Maybe there is a compromise that could be reached. 15-11

If you have any questions please let me know.

Thanks

Ricardo Flores
Associates Environmental

15-1 Response: The proposed rule sets forth requirements for metal grinding equipment at forging facilities, as a result, this equipment will become subject to SCAQMD permitting requirements. Equipment that is addressed by

Proposed Rule 1430 will be subject to Rule 212. However, this equipment will be exempt from Rule 1401 and Rule 1401.1 based on subparagraphs (g)(1)(D) and (i)(1)(F) of these rules respectively. Further, facilities that comply with subdivision (l) of Proposed Rule 1430 will not be required to undergo certain New Source Review requirements under Regulation XIII and 1401, provided permits for existing equipment are submitted within the timeframe specified in the rule.

15-2 Response: Metal grinding and metal cutting equipment that is used for maintenance activities and not to grind or cut parts for production is not subject to Proposed Rule 1430. The applicability of Proposed Rule 1430 has been modified to clearly states, "this rule does not apply to metal grinding or metal cutting that is… conducted to maintain or repair equipment."

15-3 Response: See response to 14-2 above.

14-4 Response: The compliance dates for total enclosures required by Proposed Rule 1430 are based on SCAQMD staff discussions with local planning officials in jurisdictions where forging facilities subject to the proposed rule reside. Based on these discussions SCAQMD staff was informed that review and approval of building plans would require between 10-30 days. Thus, SCAQMD staff determined that for existing buildings [six months after date of rule adoption] and for new buildings [twelve months after date of adoption] would provide adequate time to complete a total enclosure.

15-5 Response The property line of the facility means the property line of a metal forging facility as defined by paragraph (c)(17) and does not extend to offsite facilities that do not meet the definition of a metal forging facility.

15-6 Response Wind speed would be determined by a wind speed measuring device, for example, an anemometer that is used by the owner or operator or the Executive Officer.

15-7 Response At the request of stakeholders, SCAQMD staff added the allowance for an X-ray fluorescence analysis of total chromium to Proposed Rule 1430. The purpose for this provision was to provide facility's an opportunity to demonstrate low or no hexavalent chromium emissions from metals processed in their grinding operation. Changing the averaging time for this provision to all samples collected within a 48 month period could yield higher hexavalent chromium emissions during certain time periods. This would be contrary to the intent of the added provision.

Proposed Rule 1430 will require a hexavalent chromium source test within 60 days of an X-ray fluorescence analysis for a baghouse catch sample that demonstrates greater than 1% by weight of total chromium. The facility

may resume conducting X-ray fluorescence analyses for the baghouse catch post source testing, but, will be required to conduct a source test within 60 days of any result that demonstrates a baghouse catch sample with greater than 1% of total chromium by weight.

15-8 Response Baghouses or dust collectors that require HEPA filtration are not exempt from the BLDS requirements of Proposed Rule 1430. In Chapter 2, *subdivision (i)* of the Proposed Rule 1430 Staff Report the SCAQMD staff has clarified that the requirements for the BLDS are broader than those found in SCAQMD Rule 1155, because all baghouses will be required to have a BLDS.

15-9 Response The 4-hour average pressure readings required by subparagraph (i)(3)(D) for HEPA pressure monitoring are on a rolling 4-hour average. SCAQMD staff has updated the staff report to include this clarification.

15-10 Response Use of the term "entrance" in the signage provisions of subdivision (k) of Proposed Rule 1430 refers to the main entrance of the facility. SCAQMD has updated the proposed rule to state main entrance and provided additional clarification in Chapter 2 of this report.

15-11 Response During the rule development process community members requested that Proposed Rule 1430 avoid the inclusion of exemptions due to significant concerns about fugitive metal particulates from metal grinding operations. Therefore, Proposed Rule 1430 does not provide any exemptions for metal grinding activities, however, the requirements of the proposed rule are tailored to specific grinding activities by category, including, type of grinding equipment and proximity to sensitive receptors. For example, the rule provides for an alternative 98% control efficiency for 0.3 micron particles if certain criteria are met.

Based on information collected during the rule development process staff determined that the frequency of grinding activities is not necessarily indicative of low emissions. For example, although billet grinders and swing grinders may not be used as frequently as hand grinders at some facilities the intensity of these type of grinding activities can result in elevated emissions levels of metal particulates.

Response to Comment #16
Atlas Carpet Mills
January 12, 2017

From: Robert Komrij [mailto:rkomrij@atlascarpetmills.com]
Sent: Thursday, January 12, 2017 7:15 AM
To: Sam Wang <swang1@aqmd.gov>
Subject: RULE 1430

Greetings Mr. Swang

With the proposed
Metal Grinding Operations requirements be applicable at manufacturing facilities?
Occasionally we weld, cut and grind metal in our maintenance departments.
Will these proposed restrictions apply to these type of operations?
Or do the proposed restrictions apply to ONLY Metal Forging Facilities. } 16-1

Thanks
Robert Komrij / Atlas Carpet Mills / (323)724-9000 X2264

16-1 Response: Proposed Rule 1430 only applies to metal grinding and metal cutting operations at metal forging facilities. The provisions of this rule do not extend to metal grinding and metal cutting operations at non-forging facilities.

Response to Comment #17
ILMA
January 27, 2017

Independent Lubricant Manufacturers Association

400 North Columbus Street, Suite 201
Alexandria, VA 22314
p 703.684.5574
f 703.836.8503
www.ilma.org
ilma@ilma.org

February 10, 2017

Via E-Mail (SNakamura@aqmd.gov) and FedEx Delivery

Ms. Susan Nakamura
Acting Assistant Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4182

Re: Proposed Rule 1430 – Control of Emissions from Grinding Operations at Metal Forging Facilities

Dear Ms. Nakamura:

The Independent Lubricant Manufacturers Association (ILMA) supports the South Coast Air Quality Management District's (SCAQMD) adoption of Proposed Rule 1430 – Control of Emissions from Grinding Operations at Metal Forging Facilities as set forth in the February 1, 2017 draft rule language.

This letter supplements ILMA's December 9, 2016 and December 19, 2016 written submissions, as well as the oral statements made by ILMA representatives during the public workshops and working group meetings on the proposed rule. 17-1

ILMA appreciates this opportunity to comment on and support Proposed Rule 1430.

Sincerely,

Holly Alfano
Chief Executive Director

17-1 Response: Thank you for your comment. Please refer to responses 2-1 through 2-3 and 6-1 through 6-2 for SCAQMD staff's response to comments submitted by ILMA during the rulemaking process for Proposed Rule 1430.

Response to Comment #18
Boeing
February 2, 2017

From: Pearce, William R [mailto:william.r.pearce@boeing.com]
Sent: Thursday, February 2, 2017 9:11 AM
To: Daniel Garcia <dgarcia@aqmd.gov>
Subject: SCAQMD PROPOSED RULE 1430

With respect to the monitoring, question the need under (i)((3)(B) for calibration twice a year. The requirement is captured under (i)(3)(A) as to calibrations performed per manufacturer's specifications, which usually includes the frequency of calibration. Recommend that (3)(B) be modified as follows: 18-1

(B) Is calibrated according to manufacturer's specifications. At a minimum, calibration will performed on an annual basis.

18-1 Response: Thank you for your comment. Proposed Rule 1430 has been modified to include the suggested revision.

Valley Forge Talking Points

Questions

1. Have there been studies on the toxicity of Ti emissions? 19-1
    a. What are the results?
    b. What size of operations were studied?
    c. Are the results (if any) public
    d. What volume was identified in the findings?
2. Why are Ti grinding lumped in with other toxic metallic emission profiles? 19-2
    a. The findings state also include companies that grind multiple metals
    b. Ti is typically defined as non toxic
3. Are there any assurances that the permits will be processed in a reasonable amount of time – without having to expedite the permit applications – without additional fees. 19-3

Permitting

1. How will staff deal with city permitting requirements that are greater than SCAQMD permitting and installing requirements? 19-4
2. Could NOVs be issued due to external permitting requirements?
3. Has staff made provisions for extending permitting requirements?

House Keeping

1. All the fines are swept up and collected on a daily basis 19-5
2. Operators all wear inhale protection (face masks)
3. Due to minimum collection of particulates the masks will last a week prior to disposal
4. Area is kept swept clean.
5. Housekeeping is ongoing at VF

Operation

1. 2 grinders use swing grinders approximately 5.5 hr/day 19-6

2. Each grinder grinds 5 bars per day
3. Material loss due to grinding is 8-12 pounds per bar.
    a. The collection of fines directly correlates to metal reduction on the bars.
    b. The grinding is very course – not fine finish grinding – large particulate fines
4. The fines are combined with oily gloves and rags and sent to a disposal facility
5. There have been no complaints from the public to the District for the duration of the facility
6. VF is 5,300 feet from the nearest school
7. VF is in an industrial area only. No residential neighbors for about 5,000 ft
8. Major facilities adjacent – Waste Management land fill and service yard, Richold Chemical and Miller Coors Brewery – all generate odors.

19-6 cont

Recommendations:

1. Recognize the differences in large facilities and small facilities with minimal emissions profile
    a. Provide quantitative analysis of differences so Board Members have solid data to provide positive or negative votes on the rule.
    b. A bad rule pushed through without a complete analysis of all effective facilities is not a good rule.
2. Provide for alternative collection scenarios for Ti grinding vs. steel, SS and other ferrous metals with potential for hex chrome emissions.
3. Provide delayed compliance time for small emitters
4. No signage for minor sources

19-7

Other Issues

1. VF – no odor or visible emission complaints from public since the company was founded over 50 years ago.
2. VF is no violation of other 400 series rules
3. Staff estimated the cost of compliance to be about $350,000, source testing $7,500. Yet there is no assessment of actual risk relating to this facility. Thus, a true cost

19-8

effectiveness cannot be established without a determination of the cost benefit relationship of the rule.

4. What comparative analysis has been done to compare the toxicity of Ti vs. nickel, hex chrome, etc. and the correlated risk of large vs. small facilities?
5. Has there been any consideration for di mininus emission from specific applications?
6. For small facilities, consider an extended compliance date to assure proper cost effectiveness vs. emission reduction considerations are fully accounted for.
7. What has staff done to define the health risk from small emitters that grind only Ti?

19-9

on Motor and Irwindale Ave. not to mention we are directly across the street from a waste management facility and the nearest school is over a mile away.

The other issue we would be running into would be with all the permits we will need, I spoke to the contractor and he said L.A. County permitting Dept. is backed up and in some instances has taken up to 24 months to issue a permit, and under PR1430 we do not have that much time. This situation is really going to jeopardize our livelihood.

19-10

Let me know what else you need,

Thank You Tony.

19-1 Response: Please see responses 7-2 and 14-1 above.

19-2 Response: Please see responses 7-2 and 14-1 above.

19-3 Response: Please see response 4-9 above.

19-4 Response: Please see response 5-6 above.

19-5 Response: Please see responses 3-4 and 5-10 above.

19-6 Response: SCAQMD staff is concerned that based on information provided in this comment the facility's metal grinding operation generates up to 120 pounds per day of metal particulate. Further, based on material safety data sheets provided by the facility there is up to 0.8% of nickel by weight in the metals processed in the metal grinding operation. The generation of these metal particulates have the potential to result in toxic and non-toxic air emissions that require proper containment and collection. Proposed Rule 1430 is designed to address these emissions from metal grinding operations at metal forging facilities.

SCAQMD staff recognizes that some metal forging facilities are not located near a sensitive receptor (e.g., residence or school). As a result, Proposed Rule 1430 is designed with point source requirements specific to the type of metal grinding operation(s) at the facility and the enclosure requirements are based on the proximity of the facility to the nearest sensitive receptor (e.g. residence and school). Since Valley Forge is located over 1,000 feet away from the nearest sensitive receptor the facility is not required by Proposed Rule 1430 to install a total enclosure with negative air that is vented to air pollution controls.

SCAQMD staff is aware that facilities located near Valley Forge may be potential emissions sources. In-fact the nearby facilities identified by the commenter have SCAQMD permits.

19-7 Response: SCAQMD staff does not believe that is appropriate to set forth requirements for metal grinding based on the size of a metal forging facility. Based on site visits conducted by SCAQMD staff the intensity and type of grinding activity are correlated to emissions and not facility size. For example, some small metal forging facilities conduct swing grinding, which is a very intense metal grinding activity. Therefore, the requirements of the proposed rule are tailored to specific types of grinding activities, including, type of grinding equipment and proximity to sensitive receptors. For example, the rule provides for an alternative 98% control efficiency for 0.3 micron particles if certain criteria are met and requires that any facility within 1,000 feet of a sensitive receptor vent the total enclosure to negative air.

Regarding collection, it does not make sense to have alternative collection for different metal alloys based on the information gathered by SCAQMD staff during the rulemaking process. For example, your facility submitted information that states the metal grinding operation is limited to titanium alloys, however, the material safety and data sheet provided for this alloy demonstrates a presence of nickel 0.8% nickel by weight. This information does not support the need for alternative collection nor does it justify the need for delayed compliance timelines.

Regarding signage requirements, please see responses 3-11, 5-8, 11-12, 13-16, PWS-3, and PC-6.

19-8 Response: This estimated compliance cost for the facility is elevated due to current lack of air pollution controls on the facility's metal grinding operation and the need to construct an enclosure and installation of air pollution control equipment, and purchase of proper housekeeping requirements. Proposed Rule 1430 will help contain and control the estimated 120 pounds per day

of metal particulate that can be generated by the facility's metal grinding operation (i.e., based on comment 19-6).

19-9 Response: Please see responses 5-2 above.

19-10 Response: Based on discussion with building officials in the City of Azusa, where Valley Forge is located, SCAQMD staff was informed on December 14, 2016 that the review and approval for building permit(s) requires between 10-12 days. Therefore, subdivision (d) of Proposed Rule 1430 provides sufficient time to meet the total enclosure compliance dates.

From: Daniel Garcia
Sent: Friday, February 24, 2017 10:09 AM
To: Angela Kim
Subject: FW: EPA comment on SCAQMD Draft Rule 1430

Importance: High

From: Steckel, Andrew [mailto:Steckel.Andrew@epa.gov]
Sent: Friday, February 24, 2017 8:32 AM
To: Tracy Goss <TGoss@aqmd.gov>; Sutkus, Carol@ARB <carol.sutkus@arb.ca.gov>
Cc: Zimpfer, Amy <Zimpfer.Amy@epa.gov>; Vineyard, Christine <Vineyard.Christine@epa.gov>
Subject: EPA comment on SCAQMD Draft Rule 1430

EPA	**United States Environmental Protection Agency** **Region IX** **75 Hawthorne Street** **San Francisco, CA 94105-3901**

February 24, 2017

Transmittal of EPA Rule Review Comments

To:	Tracy Goss, South Coast Air Quality Management District tgoss@aqmd.gov Carol Sutkus, California Air Resources Board csutkus@arb.ca.gov
From:	Andrew Steckel, Rulemaking Office Chief steckel.andrew@epa.gov
Re:	SCAQMD Rule 1430; Control of Emissions from Grinding Operations at Metal Forging Facilities, draft dated February 1, 2017

We are providing comments based on our preliminary review of the draft rule identified above. Please direct any questions about our comments to me at (415) 947-4115 or to Christine Vineyard at (415) 947-4125.

1. Consistent with national policy regarding director discretion, please revise paragraph (d)(2) to require EPA as well as District approval of alternative methods, or specify/reference a procedure that the Executive Officer will use to determine that an alternative method is equivalent. 20-1

2. To improve enforceability, please revise paragraph (e)(4) to require that the date of version of the referenced industrial ventilation manual will be included in the facility permit. 20-2

3. For clarify, please define "wet cleaning" used in section (f) and elsewhere. 20-3

4. We believe the Smoke Generator Model listed in Appendix 1 is no longer available from the manufacturer. Please revise as appropriate. 20-4

1

20-1 Response: SCAQMD staff has revised Proposed Rule 1430 to include language in paragraph (d)(2) that references the procedure that the Executive Officer will use to determine that an alternative method is equivalent. Specifically, SCAQMD staff revised paragraph (d)(2) to include the following, "Alternative methods to minimize the release of fugitive metal dust from the total enclosure may be used if the owner or operator can demonstrate to

the Executive Officer (an) equivalent or more effective method(s) to minimize cross-draft conditions." This is consistent with language found in SCAQMD Rule 1420.2 adopted October 2, 2015.

20-2 Response: SCAQMD staff has revised the staff report to clarify that the date of the referenced industrial ventilation manual will be included in the facility permit.

20-3 Response: SCAQMD staff has revised the staff report to clarify examples of wet cleaning that are allowed, such as wet mopping and wet scrubbing conducted in a manner that does not generate fugitive metal dust.

20-4 Response: SCAQMD staff has revised Appendix 1 of Proposed Rule 1430 to reflect an example of a smoke generator model that is currently available.

Comments Received at the January 19, 2017 Public Workshop

The following comments were received at the Public Workshop for Proposed Rule 1430 on January 19, 2017.

PWS-1 Comment: Was there a change in the requirement if the source test demonstrated less than 1% total chromium?

PWS-1 Response: Based on input from stakeholders during Working Group #5 on January 11, 2017, SCAQMD staff modified PR 1430 to only require source tests of hexavalent chromium if the bag house catch was less than 1 percent [is it 1 % or less] as demonstrated at each change out when the facility removes or disposes of the materials in the baghouse catch.

PWS-2 Comment: How often would a source test occur?

PWS-2 Response: The frequency of the source test would depend on the pollutant. In general, for PM, the source test is annually, for multi-metals the source test is once every four years, and if the total chromium is greater than 1 percent from the baghouse catch, source testing for hexavalent chromium is once every four years. Subdivision (h) of the proposed rule provides more details and criteria for less and more frequent source testing.'

PWS-3 Comment: Regarding the signage requirement, the SCAQMD phone number should be listed before the facility contact. It is unnecessary to have the phone contact number of the facility as they are aware of activity occurring at the facility.

PWS-3 Response: SCAQMD staff has modified rule language requiring that SCAQMD contact information to be listed first.

PWS-4 Comment: One revision which seems critical for public health of children living near forging companies (who play in the dirt outside their homes and put it inadvertently into their mouths through touch) is that the distance of sensitive receptors be expanded from 300 feet to 500 feet. This distance is underpinned by the CARB Land Use Planning Handbook and is necessary to protect the health of children and the elderly, the most vulnerable of our society. This is also critical to safeguard patients in hospitals whose breathing is compromised. If the distance is extended from 300 to 500 feet, four public schools that would have been excluded from the benefit of additional protective measures would be safeguarded including Lindberg Elementary, Firth Rixson, Longfellow, and Robert F. Kennedy School, zoned just 70 feet beyond the current 300 feet regulation.

PWS-4 Response: Proposed Rule 1430 has been modified to extend the distance from sensitive receptors from 300 to 500 feet, such that facilities within 500 feet from a sensitive receptor will be required to have total enclosure with negative air vented to pollution controls.

PWS-5 Comment: Regarding the provision for requiring negative air for total enclosures, preschools, day care centers, Head Start Programs, and other educational settings for children 0-5 that are not located on public school grounds should be included in the category of schools rather than sensitive receptors. It is imperative that settings for children aged 0-5 (the most vulnerable of all ages) not be omitted from the most health protective provision that requires negative air for total enclosures.

PWS-5 Response: Proposed Rule 1430 has modified to require negative air for facilities within 1,000 feet of a school or and early head start schools (birth to 3 years old), head start schools (3 to 5 years old), and preschools (3-4 years old)

PWS-6 Comment: As an educator for 25 years and an advocate for children, I strongly propose that the distance of from schools be extended from 1,000 feet to 1,500 feet to provide additional protective measures. Extending the distance to 1,5000 feet will provide additional protection for two elementary schools. These schools include: Vernon City School which is zoned 1437 feet from Ajax Forge and Ann St. Elementary zoned 1100 feet from California Drop Forge. Given the environmental injustices that the children of Vernon have endured since birth as a result of Exide Battery Plant, I trust that SCAQMD, the community of Vernon, environmental activists, a sympathetic public, legislators, and even the Metal Lobby would understand the need to extend the distance from 1,000 feet to 1,500 feet to protect these children as well as the children at Ann St. Elementary. It seems unjust that they would be prevented this additional safeguard because of a 100 feet additional distance. The following CA Education Code underpins the need for this extension, requiring a distance of one quarter mile between proposed schools and sites that emit toxins (1320 ft.). "The LEA shall consult with the administering agency and the local air pollution control district or air quality management district to identify facilities within a quarter mile of the proposed site that might reasonably be anticipated to emit hazardous air emissions or handle hazardous materials, substances, or wastes and shall provide written notification of those findings." See Education Code Section 17213(b) and Public Resources Code Section 21151.8(a)(2).) An additional 180 ft. is not an unreasonable request.

PWS-6 Response: The SCAQMD staff is sensitive to schools that are in impacted areas, such as Vernon Elementary School. Extending the distance from 1,000 to 1,500 feet will have little impact on this school. The greatest reduction will be from the pollution controls for the grinding stations and the total enclosure. Adding the negative air to the total enclosure will provide an additional benefit to ensure fugitive emissions are contained within the enclosure, with the benefit to receptors that are at a much closer distance than 1,000 feet. Pursuant to the CARB handbook, there are multiple references to utilizing a 1,000 feet of separation between distribution centers, rail yards, and chrome platers. ARB's 2002 Barrio Logan Study measured

concentrations of hexavalent chromium in the air. Results indicated that over 90 percent risk reduction occurs within 300 feet. Less than 10 percent risk reduction is achieved beyond the 300 feet, and much less beyond 1,000 feet. CARB's recommendation for siting new sensitive land uses within 1,000 feet, is a precautionary measure. Establishing the requirement for negative air for schools, preschools, pre-head start, and head start programs that are 1,000 feet of a metal forging facility is health protective.

PWS-7 Comment: We do want to express our concern with what the view of the rule will be in terms to hexavalent chromium, the science we have conveyed to the District, the science of metal grinding, the data you have collected at the air emission sources demonstrate that metal grinding is not producing the dangerous levels of hexavalent chromium. We are concerned that those who are impacted by this are going to believe that this rule will resolve this problem, we would like the District to be clear at both the workshops, townhall meetings, board meetings, in your staff notes, specifically what that is going forward.

PWS-7 Response: Please refer to response to comment #5-2.

PWS-8 Comment: There should be a separation of toxic and non-toxic metals. Previously the discussion of the rule was focused on toxic metals and then 60 days later it includes both. We believe that the agency should look at the health risk of toxics. Other agencies have a separation of the two, including this one [SCAQMD]. There should be two separate solutions.

PWS-8 Response: Please refer to response to comment #5-2.

PWS-9 Comment: Previously it was understood that small hand grinding was based on where you were grinding, but now it is based on the size of the part. The definition should be changed to small part grinding since you aren't talking about surface area.

PWS-9 Response: The reference to "small hand grinding" has been changed to "small part grinding."

PWS-10 Comment: Is the District pursuing odors? We are open to discussing odors, but each week something new is coming up and we want to catch up to what your concerns are.

PWS-10 Response: The proposed rule will address odors. Requiring total enclosures are intended to reduce fugitive metal particulate emissions from metal grinding operations, but are expected to also reduce odors. Staff has added contingency odor measures, in the event there are confirmed odor complaints. The purpose of this provision is to ensure the facility is being responsive to confirmed odor complaints and implementing measures that can minimize off-site odor issues.

PWS-11 Comment: What section in the 2005 CARB advisory report are you referring to establish the 1000 feet standard? There are many distance listed and looking for clarity for each one was used. The rule is talking about every single metal used and we want to know how all those metals are connected to your reference.

PWS-11 Response: The 1,000 feet reference is from Table 1-1, Recommendations on Siting New Sensitive Land Uses Such as Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities in CARB's Air Quality and Land Use Handbook.

PWS-12 Comment: When will the economic assessment be available?

PWS-12 Response: The Draft Socioeconomic Impact Assessment for Proposed Rule 1430 will be available 30 days before the Public Hearing.

PWS-13 Comment: There is a broad range of the monthly revenue for these facilities. For some facilities, the maintenance costs are threatening these facilities.

PWS-13 Response: The SCAQMD staff understands that the cost of compliance for some facilities is financially difficult. Facilities that are grinding in the open air with no pollution controls will have higher costs as they will need to build and enclosure, and install pollution controls. Staff has incorporated mechanisms that would allow a facility to do less frequent source testing.

PWS-14 Comment: Metal grinding occurs in over 20,000 facilities that impacts many different industries. We are asking the definitions to be tighten.

PWS-14 Response: Please refer to response to comment #5-11.

PWS-15 Comment: Facilities that aren't doing swing/billet grinding at their facilities are still being included in the rule.'

PWS-15 Response: Please refer to response to comment 5-4.

PWS-16 Comment: Why has there not been an emission rate limit for PM or chromium?

PWS-16 Response: Proposed Rule 1430 does establish a PM emission limit of 0.002 grains per dry standard cubic feet. The basis of this emission limit is source tests from two metal forging facilities with metal grinding operations.

At this point, the SCAQMD staff does not have enough information to establish an emission limit for hexavalent chromium or any other toxic air contaminant. A key consideration in establishing an emission limit for is what emission limits have been achieved in practice for similar sources. Since metal grinding is currently an unregulated source and there are very few sources that have SCAQMD permits and only one facility has a source test for hexavalent chromium. The source test showed very low levels of hexavalent chromium, and in some stacks at this facility the levels were below the detection limit. The SCAQMD staff needs more information from the affected facilities to establish an emission limit, if one were

needed. It should be noted that the proposed rule only requires facilities with a baghouse catch greater than 1 percent total chromium to conduct a hexavalent chromium source test.

PWS-17 Comment: The point source requirement should have a deminimus limit based on a pounds per hour for each facility. A small facility and large facility may be emitting different amounts, but would still be meeting the emission limit that is based on concentration.

PWS-17 Response: Please refer to Response to Comment #5-4. Regardless of the size of the facility, the SCAQMD has established an emission standard of 0.002 pounds per dry standard feet. The pollution controls will be sized according to the intensity of grinding operation to meet the emission standard. For example, a facility with a smaller, less intense grinding operation would require a smaller baghouse and smaller blower than a larger more intense grinding operation.

Comments Received at the January 25, 2017 Public Consultation Meeting

The following comments were received at the Public Consultation Meeting for Proposed Rule 1430 on January 25, 2017.

PC-1 Comment: Proposed Rule 1430 requirements are being implemented at Carlton Forge Works, but odors are still persistent.

PC-1 Response: Within the last month there has been an increase in the number of confirmed odor complaints at Carlton Forge Works. At this point, there is not sufficient information to understand if there were any changes at Carlton Forge Works that caused this increase in odor complaints.

Proposed Rule 1430 has been modified to require implementation of additional measures to reduce odors from the metal grinding operation if a facility receives more than 5 confirmed odor complaints. For the purpose of this proposed rule, confirmed odor complaints must be associated with the metal grinding operation. In addition, SCAQMD Rule 402 prohibits a facility from discharging contaminants into the atmosphere that causes a nuisance to a significant amount of individuals. Additional requirements may be imposed through implementation of Rule 402.

PC-2 Comment: Proposed Rule 1430 is the first step in regulating metal working facilities and SCAQMD staff should look beyond metal forging facilities.

PC-2 Response: SCAQMD staff is in the process of developing and amending existing rules that regulate toxic metal emissions from various sources. For 2017 there are several proposed rulemakings for Proposed Rule 1420 for lead sources, Proposed Amended Rule 1407 for metal melting, Proposed Rule 1407.1 for metal foundries, Proposed Rule 1435 for metal heat treating, Proposed Amended Rule 1426 for metal finishing (for non-hexavalent chromium source), and Proposed Rule 1469 for hexavalent chromium metal finishing operations.

PC-3 Comment: The requirement to have a total enclosure with negative air are for facilities located within 300 feet of a sensitive receptor, or within 1,000 feet of a school is not sufficient. The distance should be expanded to 500 feet of a sensitive receptor, or within 2,000 feet of a school. This would be health protective and capture an additional metal forging facility that is more than 1,000 feet of a school, but less 2,000 feet.

PC-3 Response: Please refer to PWS-6.

PC-4 Comment: How will the wastewater generated from the semi-annual cleaning of the roof be handled?

PC-4 Response: The SCAQMD has required facilities to perform roof cleanings in previous rules such as Rule 1420.2 – Emission Standards for Lead from Metal Melting Facilities on a semi-annual basis. Facilities regulated under Rule

1420.2 have installed water collection systems to capture wastewater. Metal forging facilities regulated under Proposed Rule 1430 may implement similar measures. Wastewater generated at the facility would need to be discharged and handled pursuant to the wastewater discharge permit by the respective agency.

PC-5 Comment: Proposed Rule 1430 should establish fence-line monitoring. This would tell SCAQMD the location of other issues that may be present at the facility. Monitors should be placed where the risk is the greatest such as facilities with violation or have high amounts of metals being used.

PC-5 Response: Proposed Rule 1430 does not require fenceline monitoring. The proposed rule does have a series of tools to ensure that the pollution controls required under the proposed rule are working properly such as periodic source testing, installation of bag house leak detection systems, installation of continuous data acquisition systems to monitor pressure drops of increases in the HEPA filtration, and periodic smoke tests to ensure air is moving towards the pollution controls and is not being impacted by cross-drafts within the total enclosure. All of these mechanisms will ensure continued compliance.

PC-6 Comment: Regarding the signage requirement, the language on the sign should be expanded to state to include odors, dust, or smoke, and not just odors.

PC-6 Response: Staff has modified the language to state, "to report air quality issues such as odors, dust, or smoke…"

PC-7 Comment: On the sign, the SCAQMD phone number should be before the facility contact.

PC-7 Response: The proposed rule modified the signage requirement to have the SCAQMD contact information before the facility contact information.

ATTACHMENT H

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Socioeconomic Assessment for Proposed Rule 1430 – Control of Emissions from Grinding Operations at Metal Forging Facilities

March 2017

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EXECUTIVE SUMMARY

A socioeconomic analysis was conducted to assess the impacts of Proposed Rule (PR) 1430—Control of Emissions from Grinding Operations at Metal Forging Facilities. A summary of the analysis and findings are presented below.

Elements of the Proposed Rule	The purpose of PR 1430 is to protect public health by minimizing public exposure to emissions of metal particulate, some of which are toxic air contaminants (TACs) from metal grinding and metal cutting operations at forging facilities. PR 1430 would also help reduce odors. PR 1430 would ensure metal particulate emissions are appropriately vented to pollution control equipment, fugitive emissions are contained within a building enclosure, and housekeeping measures are implemented to further minimize fugitive metal particulate emissions from being re-circulated in the ambient air.
Affected Facilities and Industries	PR 1430 would affect 22 metal forging facilities, which are all classified as being in the fabricated metal manufacturing sector (NAICS 332). Fourteen of the 22 affected facilities are located in Los Angeles County, four in Orange County, and the remaining four in San Bernardino County.
Major Assumptions and Limitation of Analysis	The main requirements of PR 1430 that have major cost impacts would include the installation of baghouses and HEPA filters (point-source controls on existing and new enclosures) and the upgrading of an existing building to a total enclosure or construction of a new total enclosure. Some facilities will be required to add negative air vented to pollution controls to the total enclosure, depending on a facility's proximity to certain sensitive land uses. SCAQMD staff assumed facilities that do not have a modern baghouse would be required to, at a minimum, install a cartridge type baghouse fitted with Polyester (PE) bags. Staff also assumed that facilities that do not meet certain requirements would be required to install HEPA filtration. Further, staff assumed that most facilities would not have adequate ventilation to meet the minimum hood induced capture velocity requirements. Based on these assumptions, SCAQMD staff determined that 17 of the affected facilities subject to the rule would need to install a new baghouse with adequate ventilation to meet the minimum hood induced capture velocity requirements. In addition to a new baghouse, SCAQMD staff assumed that 13 of the 17 facilities that would need to install a new baghouse would also require installation of HEPA filtration. Also, SCAQMD staff assumed that each baghouse required by PR 1430 would need to be properly maintained with replacement PE filter bags biennially and that each HEPA filtration unit would require new filters annually.

	Additionally, staff assumed that each emission collection system would need to conduct periodic smoke tests to ensure adequate capture velocity For the 15 facilities which will need to construct a total enclosure, SCAQMD staff assumes it would cost $118[1] per square foot to construct a total enclosure based on the size of each facility's grinding operation. To further protect nearby sensitive receptors, schools, or preschools, PR 1430 would require 10 facilities to install a total enclosure with negative air. SCAQMD staff assumed that each facility required to install a total enclosure with negative air would need to purchase an anemometer to ensure compliance with the continuous in-draft velocity requirements of the total enclosure at > 200 feet per minute (fpm).
Annualized Compliance Costs	The main requirements of PR 1430 that have cost impacts for affected facilities would include total enclosures, point source emissions controls, source testing, and housekeeping measures. The average annual compliance costs due to PR 1430 is estimated to be $6.0 to $6.2 million depending on the real interest rate assumed (1 to 4 percent). Under the primary scenario, eleven facilities in the non-ferrous forging industry (NAICS 332112), a subset of fabricated metal manufacturing (NAICS 332) would bear the largest share of compliance costs (74% or approximately $4.5 million annually based on a four percent real interest rate in the primary scenario) due to the cost of installing and maintaining baghouses.
Regional Job Impacts	PR 1430 is expected to result in approximately 46 jobs forgone annually between 2017 and 2035 when a 4-percent real interest rate is assumed (approximately 44 jobs with a 1-percent real interest rate). The projected job impacts represent about 0.001 percent of the total employment in the four-county region. The manufacturing sector (NAICS 31-33), which is projected to bear all estimated total compliance costs would have an average of 15 jobs forgone per year. The sector of professional and technical services (NAICS 541) is projected to gain about 8 jobs on an annual average from additional demand for equipment installation and maintenance, expenditures made by the affected facilities to conduct source tests and ambient monitoring analysis as well as filing compliance plans. The remainder of the projected reduction in forecasted jobs would occur across all major sectors of the economy.
Competitiveness	It is projected that the manufacturing sector, where all affected facilities belong, would experience a rise in its relative cost of production by 0.003 percent and a rise in its delivered price by 0.001 percent in 2025 from the implementation of PR 1430.

[1] Based on 2016 Bureau of Labor Statistics Cost for New Industrial Building Construction, https://www.bls.gov/ppi/ppinaics236211.htm

INTRODUCTION

Proposed Rule (PR) 1430 is designed to reduce metal particulate emissions, some of which are toxic air contaminants (TACs) from metal grinding and metal cutting operations at forging facilities. PR 1430 will also help reduce odors from metal grinding and metal cutting operations. Both metal grinding and cutting operations are currently exempt from SCAQMD permits and are currently an unregulated source category. Although some of the metal grinding operations have air pollution controls, most do not. Depending on the metal alloys used in forging operations, some metal particulates can be TACs and pose a potential health risk to the surrounding community if emissions are not controlled.

To minimize the public's exposure to potential TAC emissions from metal grinding and metal cutting operations at metal forging facilities, PR 1430 would require metal particulate emissions to be vented to pollution control equipment, fugitive emissions to be contained within a building enclosure, and housekeeping measures to be implemented.

LEGISLATIVE MANDATES

The socioeconomic assessments at the SCAQMD have evolved over time to reflect the benefits and costs of regulations. The legal mandates directly related to the assessment of the proposed rule include the SCAQMD Governing Board resolutions and sections of the California Health & Safety Code (H&SC).

SCAQMD Governing Board Resolutions

On March 17, 1989 the SCAQMD Governing Board adopted a resolution that calls for an economic analysis of regulatory impacts that includes the following elements:

- Affected industries;
- Range of control costs;
- Cost effectiveness; and
- Public health benefits

On October 14, 1994, the Board passed a resolution directing staff to address the cost effectiveness of rules and amendments and the timing of their proposal. The intent was to bring forth those rules that are cost effective first as defined in the AQMP.

Health & Safety Code Requirements

The state legislature adopted legislation that reinforces and amplifies the Governing Board resolutions for socioeconomic assessments. H&SC Sections 40440.8(a) and (b), which became effective on January 1, 1991, require that a socioeconomic analysis be prepared for any proposed rule or rule amendment that "will significantly affect air quality or emissions limitations."

Specifically, the scope of the analysis should include:

- Type of affected industries;
- Impact on employment and the economy under SCAQMD jurisdiction
- Range of probable costs, including those to industries;
- Emission reduction potential;
- Necessity of adopting, amending or repealing the rule in order to attain state and federal ambient air quality standards; and the
- Availability and cost effectiveness of alternatives to the rule

Additionally, the SCAQMD is required to actively consider the socioeconomic impacts of regulations and make a good faith effort to minimize adverse socioeconomic impacts. H&SC Section 40728.5, which became effective on January 1, 1992, requires the SCAQMD to:

- Examine the type of industries affected, including small businesses; and
- Consider socioeconomic impacts in rule adoption

Finally, H&SC Section 40920.6, which became effective on January 1, 1996, requires that incremental cost effectiveness be assessed for a proposed rule or amendment that imposes Best Available Retrofit Control Technology or "all feasible measures" requirements relating to ozone, carbon monoxide (CO), oxides of sulfur (SOx), oxides of nitrogen (NOx), and their precursors. This statute does not apply to PR 1430; moreover, cost effectiveness in terms of dollars per ton is not meaningful for risk-based regulations, since many other factors besides the amount of pollution affect the risk such as the toxic potency of the contaminant and the location of receptors.

AFFECTED INDUSTRY/FACILITIES

Industry Profile

Metal forging is a manufacturing process where metal is pressed, pounded, or squeezed under great pressure into high strength parts known as forgings. The process is normally performed hot by preheating the metal to a desired temperature before it is worked. While any metal can be forged, some of the most common metals include carbon steel, alloy steel, stainless steel, very hard tool steels, aluminum, titanium, brass, copper, cobalt, nickel, and molybdenum. These metals are found in billets or ingots that are delivered to the respective forging company. The forging industry is composed of plants that: make parts to order for customers (custom forgings), make parts for their own company's internal use (captive forgings), or make standard parts for resale (catalog forgings). Metal forging creates parts that vary in size, shape, and sophistication. Some of the largest customer markets include: aerospace, national defense, automotive, oil industry, agriculture, construction, and general industrial equipment. Employment growth in this sector is driven by the needs of manufacturing facilities, as well as the construction, repair, and maintenance of infrastructure like bridges, buildings, and roadways.

About 3,400 fabricated metal manufacturing[2] establishments (NAICS 332) are located in the four-county region of Los Angeles, Orange, Riverside, and San Bernardino Counties.[3] Currently, the sector supplies about 80,000 jobs to the regional economy which has more over 7 million payroll jobs.[4] Average annual pay in the four-county region for workers in the fabricated metal manufacturing sector is about $54,000, which is four percent below the average pay of about $56,000 in the region.[5]

Affected Facilities

PR 1430 would affect 22 metal forging facilities. Fourteen of the 22 affected facilities are located in Los Angeles County, four in Orange County, and the remaining four in San Bernardino County.

All potentially affected industries are in the fabricated metal manufacturing sector (NAICS 332). Table 2 lists the type of manufacturing at affected facilities, and for each type, the facilities' industry classification, and the number of such facilities. A detailed discussion of the assumptions and basis for the number of facilities that could potentially require additional pollution controls can be found in the Staff Report for the proposed rule.

Table 2: Affected Facilities that Potentially Could Need Additional Monitoring and Controls to Comply with PR 1430

Type of Facility	Industry Classification (6-Digit NAICS Code)	Estimated Number of Facilities
Scrap Metal Forgers	Non-Ferrous Forging (332112)	11
Iron and Steel Forgers	Iron and Steel Forging (332111)	8
Heat-Treated Metal Manufacturers	Metal Heat Treating (332811)	1
Steel Mills	Fabricated Structural Metal Manufacturing (332312)	1
Industrial Fasteners Manufacturing	Bolt, Nut, Screw, Rivet, and Washer Manufacturing (332722)	1
Total		**22**

[2] Metal forging facilities are included in the fabricated metal manufacturing sector. The 6-digit NAICS level has limited employment and wage data.
[3] California Employment Development Department (EDD). QCEW Census of Employment and Wages for the 1st Quarter of 2016.
[4] Op cid.
[5] Op cid.

Small Businesses

The SCAQMD defines a "small business" in Rule 102 for purposes of fees as one which employs 10 or fewer persons and which earns less than $500,000 in gross annual receipts. The SCAQMD also defines "small business" for the purpose of qualifying for access to services from the SCAQMD's Small Business Assistance Office (SBAO) as a business with an annual receipt of $5 million or less, or with 100 or fewer employees. In addition to the SCAQMD's definition of a small business, the federal Clean Air Act Amendments (CAAA) of 1990 and the federal Small Business Administration (SBA) also provide definitions of a small business.

The CAAA classifies a business as a "small business stationary source" if it: (1) employs 100 or fewer employees, (2) does not emit more than 10 tons per year of either VOC or NOx, and (3) is a small business as defined by SBA. The SBA definitions of small businesses vary by six-digit North American Industrial Classification System (NAICS) codes. In general terms, a small business must have no more than 500 employees for most manufacturing industries, and no more than $7 million in average annual receipts for most nonmanufacturing industries.[6] A business in the industry of fabricated metal manufacturing (NAICS 332) with fewer than 750 to 1,500 employees is considered a small business by SBA.

Information on employees and sales for 19 out of 22 facilities is available, based on 2016 data from Dun and Bradstreet. None of the 19 facilities for which there is sales and employment data were reported as a small business as defined under Rule 102. Under CAAA definition, 13 facilities are considered small businesses and under SBA's definition, all 19 facilities are considered small businesses.

COST ASSUMPTIONS

The main requirements of PR 1430 that have cost impacts for affected facilities would include total enclosures, point source emissions controls, source testing, and housekeeping measures. Probable compliance costs of the proposed rule were developed based on a combination of data supplied by stakeholders from the metal forging industry and included industry representatives, facility operators, equipment manufacturers and vendors. Additionally, SCAQMD staff reviewed each facility's operating permits, performed on-site surveys and conducted phone interviews to determine the type of additional equipment (e.g., high efficiency bags for enhanced emissions control equipment, sweepers for housekeeping, etc.) and services needed to comply with the proposed rule. SCAQMD staff used this permit data and survey information to understand the type and frequency of housekeeping activities currently implemented by each facility subject to the proposed rule and to determine additional housekeeping activities to be implemented by each to comply with the requirements of PR 1430.

[6] See the SBA website (http://www.sba.gov/community/blogs/community-blogs/small-business-matters/what-small-business-what-you-need-know-and-wh).The latest SBA definition of small businesses by industry can be found at http://www.sba.gov/content/table-small-business-size-standards.

The costs presented in this assessment primarily cover both the capital cost and maintenance cost of emissions control equipment, for example, the use of polytetrafluoroethylene (PTFE) baghouse bags and sweepers for housekeeping. However, the costs do not include uncertainties or unexpected construction costs (e.g., variations in final quantities of PTFE bags needed, additional engineering cost, and/or contract administration). The costs presented in this assessment are intended to represent typical to high costs for equipment, maintenance activities and administrative review. All estimated costs have been adjusted to reflect 2015 dollar values.

COMPLIANCE COSTS

The main requirements of PR 1430 that have cost impacts for affected facilities would include total enclosures, point source emissions controls, housekeeping, and source tests. The annual compliance costs due to PR 1430 are estimated to range from $6.0 million to $6.2 million, depending on the real interest rate assumed (1%-4%).[7] Table 3 presents average annual compliance cost of PR 1430 by requirement categories.

[7] In 1987, SCAQMD staff began to calculate cost-effectiveness of control measures and rules using the Discounted Cash Flow method with a discount rate of 4 percent. Although not formally documented, the discount rate is based on the 1987 real interest rate on 10-year Treasury Notes and Bonds, which was 3.8 percent. The maturity of 10 years was chosen because a typical control equipment life is 10 years; however, a longer equipment life would not have corresponded to a much higher rate-- the 1987 real interest rate on 30-year Treasury Notes and Bonds was 4.4 percent. Since 1987, the 4 percent discount rate has been used by SCAQMD staff for all cost-effectiveness calculations, including BACT analysis, for the purpose of consistency. The incremental cost reported in this assessment was thus annualized using a real interest rate of four percent as the discount rate. As a sensitivity test, a real interest rate of one percent will also be used, which is closer to the prevailing real interest rate.

Table 3: Annual Compliance Costs of PAR 1430 by Category (2015 Dollars)

Category	Total Cost	Annualized Cost at 4% Real Interest Rate	Annualized Cost at 1% Real Interest Rate
Point Source Control-Baghouse*	$7,872,558	$970,615	$831,200
Point Source Control-HEPA*	$715,593	$88,226	$75,553
Total Enclosure**	$1,390,187	$102,292	$77,037
Cost of Total Enclosure with Negative Air*	$627,034	$104,917	$89,847
Total Enclosure with Negative Air Anemometer*	$8,985	$1,107	$948
Housekeeping Equipment – Vacuum***	$62,244	$11,873	$10,740
PM Emissions Source Test (Every Year)	$165,000	$165,000	$165,000
Hexavalent Chromium (CrVI) and Multi-Metals Emissions Source Test (Every 4 Years)	$495,000	$123,750	$123,750
Smoke Test (4 Times a Year)	$2,096	$8,383	$8,383
Baghouse Maintenance (Every 2 Years)	$1,567,410	$783,705	$783,705
HEPA Maintenance (Every Year)	$840,910	$840,910	$840.910
Housekeeping Roof Cleaning (Twice a Year)	$31,250	$68,345	$68,345
Annual Electricity	$2,902,854	$2,902,854	$2,902,854
Total		**$6,171,980**	**$5,978,276**

*Cost is annualized over 10 years of expected equipment life
**Cost is annualized over 20 years of expected equipment life
***Cost is annualized over 6 years of expected equipment life
Note: Cost estimates based staff conversations with vendors

Total Enclosures

A total enclosure is defined in PR 1430 as a permanent containment structure, completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with limited openings to allow access and egress for people and vehicles, that is free of breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust. PR 1430 requires that within six months of rule adoption, facilities that are conducting metal grinding or metal cutting within a building, must conduct all metal grinding and metal cutting operations inside a total enclosure and minimize the release of fugitive metal dust emissions from passages, doorways, and bay doors. For facilities not conducting metal grinding or metal cutting in a building prior to date of rule adoption, metal grinding and metal cutting operations are to be conducted within a total enclosure and minimize the release of fugitive metal dust emissions within 12 months of rule adoption. The primary intent of this requirement is to provide maximum containment and minimize fugitive metal dust emissions and odors generated from areas where metal grinding occurs. SCAQMD staff assumed that it would cost approximately $10 per square foot of wall area to convert an existing building to a total enclosure and that it would cost $118[8] per square foot of building space to construct a new total enclosure (i.e., construction of total enclosure without an existing building). Based on the proposed requirements of

[8] Based on 2016 Bureau of Labor Statistics Cost for New Industrial Building Construction, https://www.bls.gov/ppi/ppinaics236211.htm

PR 1430 four (4) facilities would be required to build a new total enclosure and three (3) facilities would be required to convert an existing building to a total enclosure. Based on the size of each facility's grinding operation, SCAQMD staff determined that this requirement would result in a capital cost of $1.4 million.

To further protect nearby sensitive receptors[9], PR 1430 would require some facilities to install negative air vented to pollution controls for the total enclosure. Specifically, an owner or operator that conducts metal grinding or metal cutting operations within 500 feet of a sensitive receptor that is not a school[10], or within 1,000 feet of a school, pre-school, early headstart or headstart, measured from the edge of the total enclosure to the property line of the nearest sensitive land use would be required to vent the total enclosure to an emission control device no later than 6 months after a Permit to Construct for the emission control device is issued by the Executive Officer. The in-draft velocity of the total enclosure with negative air shall be continuously maintained at a minimum of 200 feet per minute at any opening including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-up doors. The in-draft velocity of 200 fpm was selected based on U.S. EPA Method 204 – Criteria for and Verification of a Permanent or Temporary Enclosure. SCAQMD staff based the install negative air on an established cost formula from the sixth edition of the U.S. EPA's Air Pollution Control Cost Manual[11] that accounts for additional capital costs incurred for the purchase of equipment such as fans, motors, vents, ductwork, and doors and the installation cost for this equipment. Additionally, SCAQMD staff assumed that each of the 10 facilities required to install negative air for the total enclosure would need to purchase an anemometer[12] to ensure compliance with the continuous in-draft velocity requirements of the total enclosure at > 200 fpm. SCAQMD staff determined that the installation of negative air for ten (10) facilities would result in a capital cost of $850,975 and an additional $8,985 for the capital cost of anemometers.

Point Source Emissions Controls

Subdivision (e) – Metal Grinding and Cutting Emissions Requirements of PR 1430 requires emissions from metal grinding and metal cutting operations to be vented to an emission control device no later than 6 months after a Permit to Construct for the emission control device is issued by the Executive Officer. The emission control device shall not exceed a PM outlet concentration of 0.002 grains of particulate matter per dry standard cubic foot (gr/dscf). Also, PR 1430 requires that the final stage of any emission control device be fitted with HEPA filters or filter media rated by the manufacturer to achieve a minimum of

[9] Any residence including private homes, condominiums, apartments, and living quarters; daycare centers; health care facilities such as hospitals or retirement and nursing homes; long-term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

[10] Any public or private school, including early headstart education (birth to 3 years old), headstart education (3 to 5 years old), preschools (3-4 years old), and juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including kindergarten and grades 1 through 12, inclusive, but does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property, but does not include unimproved school property.

[11] Based on EPA Air Pollution Control Cost Manual, Sixth Edition, January 2002, https://www3.epa.gov/ttncatc1/dir1/c_allchs.pdf

[12] Based on vane anemometer by Omega, http://www.omega.com/pptst/HHF-SD2.html

99.97% control efficiency for 0.3 micron particles, and designed in a manner that does not conflict with requirements or guidelines set forth by the OSHA or CAL-OSHA regarding worker safety, and the National Fire Protection Association (NFPA) regarding safety. Further, all emission control devices are required to be operated at the minimum hood induced capture velocity specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with the SCAQMD.

To assess the socioeconomic impacts of metal grinding and metal cutting point source emissions controls required by PR 1430, SCAQMD staff assumed facilities subject to the point source emissions control requirements of subdivision (e) that do not have a modern baghouse would be required to, at a minimum, install a cartridge type baghouse fitted with Polyester (PE) bags. Staff also assumed that facilities that do not meet the criteria specified in paragraph (e)(3) would be required to install HEPA filtration. Further, staff assumed that most facilities would not have adequate ventilation to meet the minimum hood induced capture velocity requirements.

Based on these assumptions SCAQMD staff determined that 18 of the affected facilities subject to the rule would need to install a new baghouse with adequate ventilation to meet the minimum hood induced capture velocity requirements. In addition to a new baghouse SCAQMD staff assumed that 13 of the affected facilities would require installation of HEPA filtration. Also, SCAQMD staff assumed that each baghouse required by PR 1430 would need to be properly maintained with replacement PE filter bags biennially and that each HEPA filtration unit would require new filters annually. Additionally, staff assumed that each emission collection system would need to conduct periodic smoke tests per paragraph (i)(4) to ensure adequate capture velocity consistent with paragraph (e)(4). Thus, SCAQMD staff estimated that the capital cost for metal grinding and metal cutting point source controls[13] would be approximately $7.8 million including an annual maintenance cost of approximately $4.45 million for biennial PE filter bag replacement[14] and annual HEPA filter replacement.[15] It should be noted that the annual maintenance cost for the baghouse and HEPA filtration includes an annual energy cost (i.e., $2.9 million annually for electricity use alone) for operation of the point source control devices.

Housekeeping

PR 1430 includes housekeeping requirements that are proposed to minimize fugitive metal emissions. All requirements would be effective within 30 days of rule adoption except for the requirements to conduct semi-annual roof top wet cleanings or vacuuming with a HEPA

[13] Based on U.S. EPA Air Pollution Control Cost Manual, Sixth Edition, January 2002, https://www3.epa.gov/ttncatc1/dir1/c_allchs.pdf

[14] Assumes change out of polyester cartridge bags biennially, estimated cost from Section 6 of EPA Air Pollution Control Cost Manual, Sixth Edition, January 2002 , Table 1.8: Bag Prices, average of polyester pulse jet, cartridge filter bags, (i.e. bag diameter 4-7/8 and 6-1/8 inches)

[15] Based on 2010 SCAQMD Rule 1420.1 Socioeconomic Analysis, estimated HEPA costs are: $2/ cubic feet per minute (cfm) for 1 - 10,000 cubic feet per minute(cfm); $1.75/cfm for 10,001 cfm - 80,000 cfm; $0.75/cfm for 80,001 cfm - 125,00 cfm.

vacuum. Upon surveying each facility subject to PR1430, SCAQMD staff concluded that most facilities currently conduct housekeeping measures much like the proposed requirements using mobile wet sweepers, however, some facilities do not possess the proper equipment to maneuver in confined areas near grinding and cutting equipment. Therefore, SCAQMD staff assessed an additional cost impact ranging of approximately $2,400 per additional HEPA vacuum[16]needed at each facility. As a result, SCAQMD staff determined that the additional housekeeping measures required by PR 1430 would result in a capital cost of approximately $62,000. Further, SCAQMD staff assumed that it would cost $68,000[17] annually to conduct roof washings required by the housekeeping requirements of the rule.

Source Tests

The proposed rule would require annual source tests for PM emissions once every 12 months to demonstrate compliance with the particulate emission standard of 0.002 grains per dry cubic foot. If an annual source test demonstrates that PM emissions were no more than 50% of the PM emission standard of 0.002 grains of particulate matter per dry standard cubic foot the next test for PM emissions from that emission control device may be performed no later than 24 months after the date of the most recent test.

Additionally, initial source tests for hexavalent chromium and multiple metal emissions would be required. Subsequent source tests for hexavalent chromium and multiple metal emissions are required once every 48 months to be harmonious with the AB2588 quadrennial cycle for evaluating risk. However, if a facility demonstrates metal grinding or metal cutting operations contain total chromium concentrations of 1% or less during the removal or disposal of any baghouse catch as determined by a metals analysis by X-ray fluorescence, the owner or operator is not required to source test once every 48 months. If an analysis by X-ray fluorescence demonstrates that a metal grinding or metal cutting operation contain greater than 1% of total chromium the owner or operator must resume the quadrennial schedule.

SCAQMD staff estimates that the cost per stack for an outlet emissions source test[18] are as follows: $5,000 for a PM outlet emissions source test, $7,500 for a hexavalent chromium emissions outlet source test, and $7,500 for a multiple metals emissions outlet source test. SCAQMD staff assumed that the cost to conduct a hexavalent chromium source test would exceed the cost of a metals analysis by X-ray fluorescence, therefore, the cost to comply with the source test requirements for the proposed rule is limited to source testing for outlet emissions of the following: PM, hexavalent chromium, and multiple metals. Based on these estimated costs SCAQMD staff assumed it would cost approximately $288,000 annually.

[16] Based on cost of a single 15 gallon HEPA Vacuum, http://www.minutemanvac.com/minuteman-vac-x839-dry-vacuum.html

[17] Assumes a cost of $1,000 per washing and $250 of water use based on 2010 version of Rule 1420.1.

[18] Based on multi-metals source test costs for SCAQMD Rule 1420.2 Socioeconomic Analysis and communication with SCAQMD Source Testing staff on 1/3/2017.

Table 4 summarizes the projected compliance costs by industry. The non-ferrous forging industry (NAICS 332112) would bear the largest share of compliance costs (74% or an annual average of $4.5 million) primarily due to the construction and maintenance of baghouses.

Table 4: Projected Compliance Costs by Industry for Affected Facilities that Potentially Could Need Additional Pollution Controls (2015 Dollars)

Industry that Typically Uses the Equipment (6-Digit NAICS Code)	Number of Facilities	Projected Annual Compliance Costs	
		4% Real Interest Rate	1% Real Interest Rate
Non-Ferrous Forging (332112)	11	$4,536,565	$ 4,395,555
Iron and Steel Forging (332111)	8	$ 1,351,856	$ 1,305,802
Metal Heat Treating (332811)	1	$ 55,425	$ 54,576
Fabricated Structural Metal Manufacturing (332312)	1	$ 224,945	$ 219,197
Bolt, Nut, Screw, Rivet, and Washer Manufacturing (332722)	1	$ 3,190	$ 3,147
All Industries		**$ 6,171,980**	**$ 5,978,277**

Table 5 shows the range of projected compliance costs by facility. It is important to note that some facilities appear to be disproportionately affected by the rule, however, these facilities have no existing air pollution controls for their metal grinding or metal cutting operation. As a result, the facilities will be required to install sufficient air pollution controls to comply with PR 1430. By comparison, some other facilities that have significantly lower compliance costs have existing controls that require minimal upgrades to comply with PR 1430.

Table 5: Projected Compliance Costs by Facility that Potentially Could Need Additional Pollution Controls (2015 Dollars)

Facility	Projected Annual Compliance Costs	
	4% Real Interest Rate	**1% Real Interest Rate**
Facility A	$3,190	$3,147
Facility B	$3,190	$3,147
Facility C	$23,549	$22,937
Facility D	$50,020	$47,558
Facility E	$55,425	$54,576
Facility F	$65,996	$63,776
Facility G	$72,447	$72,259
Facility H	$114,591	$108,447
Facility I	$174,793	$169,370
Facility J	$198,308	$198,210
Facility K	$216,891	$210,743
Facility L	$218,779	$208,450
Facility M	$224,945	$219,197
Facility N	$233,585	$228,388
Facility O	$253,118	$242,645
Facility P	$281,085	$272,797
Facility Q	$284,639	$275,715
Facility R	$583,629	$570,517
Facility S	$660,334	$645,400
Facility T	$752,993	$735,241
Facility U	$826,235	$798,063
Facility V	$874,238	$827,693
Total 22 Facilities	**$6,171,980**	**$5,978,277**

MACROECONOMIC IMPACTS ON THE REGIONAL ECONOMY

The REMI model (PI+ v2.0.3) was used to assess the total socioeconomic impacts of PR 1430. The model is appropriate to be used for evaluating the impacts from a policy change and links the economic activities in the counties of Los Angeles, Orange, Riverside, and San Bernardino, and for each county, it is comprised of five interrelated blocks: (1) output and demand, (2) labor and capital, (3) population and labor force, (4) wages, prices and costs, and (5) market shares.[19]

The assessment herein is performed relative to a baseline where PR 1430 would not be implemented. The proposed rule would create a policy scenario under which the affected facilities would incur annual compliance costs totaling $6.0 million to $6.2 million to install additional control equipment and comply with other requirements of PR 1430. The annualized compliance costs are assumed to start in 2017 and would remain the same until 2035, the last year of the analysis time frame.

Direct effects of PR 1430 have to be estimated and used as inputs to the REMI model in order for the model to assess secondary and induced impacts for all the actors in the four-county economy on an annual basis and across a user-defined horizon (2017 to 2035). Direct effects of the proposed rule include additional costs to the affected entities and additional sales, by local vendors, of equipment, devices, or services that would meet the proposed requirements. While compliance expenditures may increase the cost of doing business for affected facilities, the purchase of additional baghouses and HEPA filters combined with spending on total enclosures, source tests, and housekeeping measures, may increase sales in other sectors. Table 6 lists the industry sectors modeled in REMI that would either incur cost or benefit from the compliance expenditures.[20]

[19] Within each county, producers are made up of 66 private non-farm industries, three government sectors, and a farm sector. Trade flows are captured between sectors as well as across the four counties and the rest of U.S. Market shares of industries are dependent upon their product prices, access to production inputs, and local infrastructure. The demographic/migration component has 160 age/gender/race/ethnicity cohorts and captures population changes in births, deaths, and migration. (For details, please refer to REMI online documentation at http://www.remi.com/products/pi.)

[20] It is worth mentioning that improved public health due to reduced air pollution emissions may also result in a positive effect on worker productivity and other economic factors; however, public health benefit assessment requires the modeling of air quality improvements. Therefore, it is conducted for Air Quality Management Plans and not for individual rules or rule amendments.

Table 6: Industries Incurring *vs.* Benefitting from Compliance Costs/Spending

Source of Compliance Costs	REMI Industries Incurring Compliance Costs (3-digit NAICS)	REMI Industries Benefitting from Compliance Spending (NAICS)
Baghouse	Fabricated Metal Manufacturing (332)[21]	*One-time-Capital:* Machinery Manufacturing (333)
HEPA Filters		*One-time-Capital:* Machinery Manufacturing (333)
Building Enclosure		*One-time-Capital:* Construction (236)
Housekeeping Vacuum		*One-time-Capital:* Electric Equipment and Appliances (335)
Building Enclosure Negative Air & Anemometer		*One-time-Capital:* Computer and Electronics (334)
Smoke and Source Tests		*Recurring Cost:* Professional, Scientific, and Technical Services (541)
Roof Washing		*Recurring Cost:* Construction/Contractors (238)
Energy\Utilities		*Recurring Cost:* Utilities (221)
Baghouse Maintenance		*Recurring Cost:* Professional, Scientific, and Technical Services (541)

PR 1430 is expected to result in approximately 46 jobs forgone between 2017 and 2035 when a 4-percent real interest rate is assumed (approximately 44 jobs with a 1-percent real interest rate). The projected job impacts represent about 0.001 percent of the total employment in the four-county region. As presented in Table 7, almost all major sectors of the regional economy would incur minor jobs forgone from induced and secondary impacts of PR 1430.

[21] See Table 5 for the 6-digit breakdown of affected facilities in the fabricated metal manufacturing sector.

It is estimated that in 2017, 32 additional jobs would be created in the overall economy. Positive job impacts in the sector of manufacturing (NAICS 31-33) are due to purchase of various types of control equipment by the affected facilities (as presented in Table 6). The sector of professional and technical services (NAICS 541) are projected to gain 8 jobs annually from additional demand for equipment installation and maintenance as well as expenditures made by the affected facilities to conduct source tests and ambient monitoring analysis as well as filing compliance plans.

Although the manufacturing sector would bear the majority of estimated total compliance costs of the PR 1430, the regional industry job impact is projected to be relatively small (annual average of 15 jobs foregone between 2017 and 2035). This is because other businesses in the manufacturing sector, specifically in the machinery manufacturing industry, are expected to benefit from the increased sale of various types of control equipment, thus offsetting the direct effect of compliance costs incurred by other manufacturing facilities. In earlier years, positive job impacts from the expenditures made by the affected facilities would more than offset the jobs forgone from the additional cost of doing business.

Table 7: Job Impacts of Proposed Rule

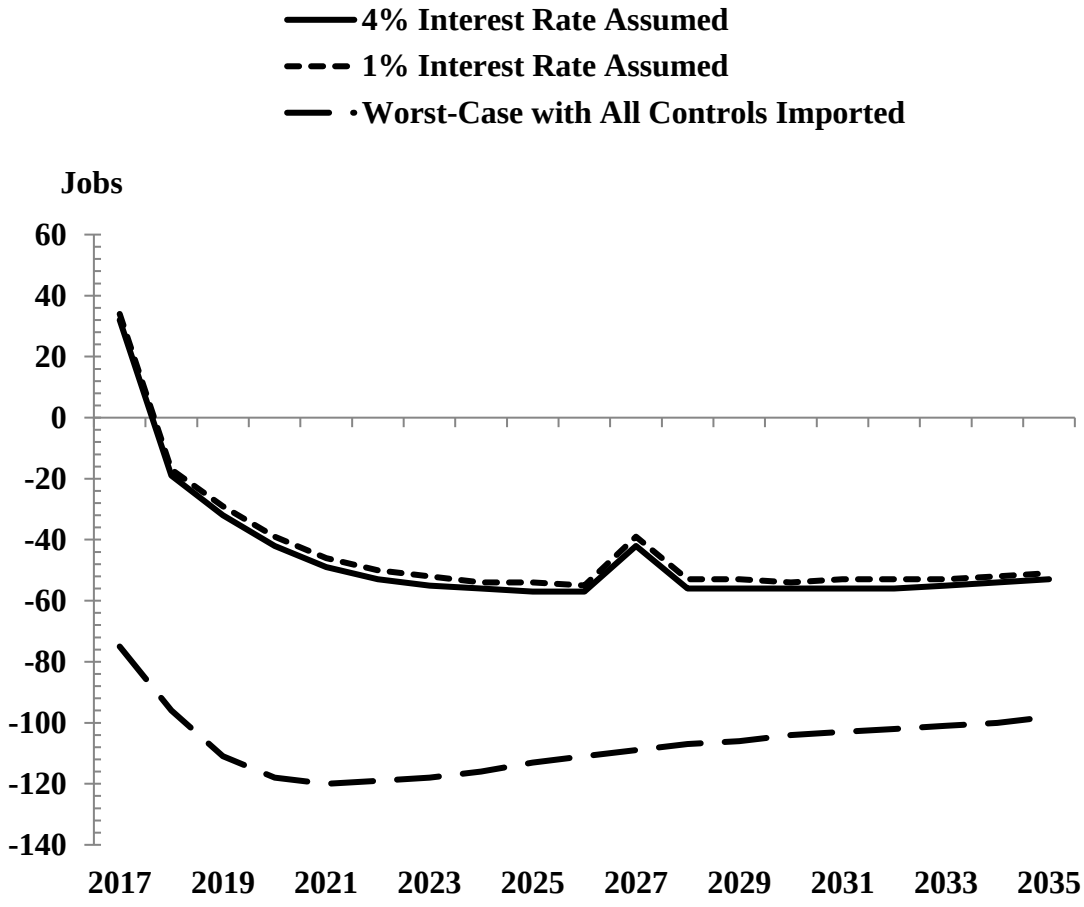
Industries (NAICS)	2017	2025	2035	Average Annual Jobs (2017-2035)	Average Annual Baseline Jobs without Rule (2017-2035)	% Change from Baseline Jobs
Construction (23)	9	-5	-3	-3	503,355	-0.0007
Utilities (22)	3	2	2	2	18,671	0.0122
Machinery (333)	8	2	1	2	27,645	0.0088
Fabricated Metal (332)	-3	-13	-13	-12	92,645	-0.0126
Rest of Manufacturing (31-33)	0	-7	-6	-6	526,180	-0.0011
Total Manufacturing (31-33)	5	-18	-18	-15	646,469	-0.0023
Wholesale trade (42)	1	-3	-2	-2	491,455	-0.0004
Retail trade (44-45)	-3	-8	-7	-7	1,010,271	-0.0007
Professional and technical services (54)	13	7	6	8	947,238	0.0008
Food services and drinking places (722)	0	-4	-4	-4	737,569	-0.0005
Government (92)	1	-4	-5	-3	912,517	-0.0004
Other Industries	2	-23	-22	-20	6,858,324	-0.0001
Total	**32**	**-57**	**-53**	**-46**	**12,125,869**	**-0.0004**

*Note: Jobs includes self-employment.

Figure 1 presents a trend of job gains and losses from 2017 to 2035. During the first few years of implementation, small positive job impacts would be expected in sectors associated with the installation of controls and the construction of enclosures. Negative job impact would lessen slightly in year 2027 when the affected facilities would need to replace point-source controls at the end of their equipment life. The replacement purchase in itself would act as a temporary stimulus to the regional economy if, as assumed under the primary scenario, part of this spending would benefit local vendors of pollution controls and installation services by increasing their sales volume.

In addition, staff has analyzed an alternative scenario (worst-case) where the affected facilities would not purchase any controls or services from providers within the Basin, which would result in an average of 107 jobs forgone annually.

Figure 1: Projected Regional Job Impact, 2017-2035



Competitiveness

The additional cost brought on by PR 1430 would increase the cost of services rendered by the affected industries in the region. The magnitude of the impact depends on the size and diversification of, and infrastructure in a local economy as well as interactions among industries. A large, diversified, and resourceful economy would absorb the impact described above with relative ease.
Changes in production and service costs would affect prices of goods produced locally. The relative delivered price of a good is based on its production cost and the transportation cost of delivering the good to where it is consumed or used. The average price of a good at the place of use reflects prices of the good produced locally and imported elsewhere.

It is projected that the manufacturing sector, where most of the affected facilities belong, would experience a rise in its relative cost of production by 0.003 percent and a rise in its delivered price by 0.001 percent in 2025 from the implementation of PR 1430.

RULE ADOPTION RELATIVE TO THE COST EFFECTIVENESS SCHEDULE

On October 14, 1994, the Governing Board adopted a resolution that requires staff to address whether the rules being proposed for adoption are considered in the order of their cost-effectiveness. The 2012 Air Quality Management Plan (AQMP) ranked, in the order of cost-effectiveness, all of the control measures for which costs were quantified. It is generally recommended that the most cost-effective actions be taken first. PR 1430 would reduce metal particulate, some of which are toxic air contaminants, and thus was not ranked by cost-effectiveness relative to other AQMP control measures in the 2012 AQMP.

INCREMENTAL COST-EFFECTIVENESS

As previously discussed, PR 1430 is regulating a source category that is currently unregulated and is not required to have an SCAQMD permit. Implementation of the proposed rule will result in substantial reductions in particulate matter as some facilities have no pollution controls and those with pollution controls have shown operational and design issues that are not properly capturing point source emissions and can lead to fugitive emissions. Evidence of operational and design issues with pollution controls include observations of visible emissions that are escaping ducting to pollution controls and visible emissions that are not being captured through hoods indicating that the collection efficiency is not appropriate. At this time, there is not sufficient information to estimate the baseline PM emissions as much of these emissions are fugitive and cannot be quantified. As a result, the overall PM emission reductions from this proposed rule cannot be quantified and staff cannot calculate the cost-effectiveness of Proposed Rule 1430 at this time.

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ATTACHMENT I

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Environmental Assessment for Proposed Rule 1430 – Control of Emissions From Metal Grinding Operations at Metal Forging Facilities

February 2017

SCAQMD No. 01112017SW
State Clearinghouse No: 2017011019

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PREFACE

This document constitutes the Final Environmental Assessment (EA) for Proposed Rule (PR) 1430 - Control of Emissions From Metal Grinding Operations at Metal Forging Facilities. A Draft EA was released for a 30-day public review and comment period from January 11, 2017 to February 10, 2017. Analysis of PR 1430 in the Draft EA did not result in the identification of any environmental topic areas that would be significantly adversely affected. Three comment letters were received from the public regarding the analysis in the Draft EA. The comment letters received relative to the Draft EA and responses to individual comments are included in Appendix E of this document.

In addition, subsequent to release of the Draft EA, modifications were made to PR 1430 and some of the revisions were made in response to verbal and written comments received. To facilitate identification, modifications to the document are included as underlined text and text removed from the document is indicated by ~~strikethrough~~. To avoid confusion, minor formatting changes are not shown in underline or strikethrough mode.

Staff has reviewed the modifications to PR 1430 and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the draft document. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5 and §15088.5. Therefore, this document now constitutes the Final EA for PR 1430.

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CHAPTER 1

PROJECT DESCRIPTION

INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (SCAQMD or District) in 1977[1] as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin (Basin) and portions of the Salton Sea Air Basin and Mojave Desert Air Basin. By statute, the SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all federal and state ambient air quality standards for the District[2]. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP[3]. The AQMP is a regional blueprint for how the SCAQMD will achieve air quality standards and healthful air and the Draft Final 2016 AQMP[4] contains multiple goals promoting reductions of criteria air pollutants, greenhouse gases, and toxics. In particular to toxics emissions, more information has become available about metal forging facilities with metal grinding and cutting operations indicating that more controls are needed to address fugitive toxic particulate emissions, especially metal particulates. Since heavy metals, such as nickel, cadmium, hexavalent chrome, cobalt and metal particulate have high relative risks compared to other toxics and can create health problems from ingestion, dermal exposure, and through consumption of breast-milk, the Draft Final 2016 AQMP contains SCAQMD's air toxics control strategy TXM-01 - Control of Metal Particulate from Metal Grinding Operation, to specifically address reducing metal particulate emissions from metal grinding activities at metal forging facilities, metal foundries, and plating operations.

Proposed Rule (PR) 1430 - Control of Emissions From Metal Grinding Operations at Metal Forging Facilities, would partially implement TXM-01, by reducing toxic emissions, particulate matter emissions, and odors from metal grinding and metal cutting operations at metal forging facilities. Both metal grinding and metal cutting operations are currently exempt from SCAQMD permits, and as such operations are currently an unregulated source category. Although some of the metal grinding and metal cutting operations have air pollution controls, most are not permitted and do not have controls. PR 1430 will ensure that metal particulate emissions are appropriately vented to air pollution control equipment, fugitive emissions are contained within a building enclosure, and housekeeping measures are implemented to further minimize emissions from metal grinding and metal cutting operations at metal forging facilities. Upon implementation, PR 1430 would be expected to reduce health risks and minimize public nuisance and odors affecting neighboring businesses and residents.

PR 1430 would apply to metal forging facilities located within SCAQMD's jurisdiction and classified by the North American Industry Classification System (NAICS) code for ~~these industries: 332111 - Iron and Steel Forging, and 332112 - Nonferrous Forgings~~ the fabricated metal manufacturing sector (NAICS 332). There are 22 facilities within the District with 14 located in Los Angeles County, four located in Orange County, and four located in San Bernardino County.

[1] The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., ch. 324 (codified at Health and Safety Code §§40400-40540).
[2] Health and Safety Code §40460(a).
[3] Health and Safety Code §40440(a).
[4] SCAQMD, Draft Final 2016 Air Quality Management Plan. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/draft-final-aqmp/clean/2016finaldraftaqmpdec2016(clean).pdf

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA), California Public Resources Code §21000 *et seq.*, requires environmental impacts of proposed projects to be evaluated and feasible methods to reduce, avoid or eliminate significant adverse impacts of these projects to be identified and implemented. The lead agency is the "public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect upon the environment" (Public Resources Code §21067). Since the SCAQMD has the primary responsibility for supervising or approving the entire project as a whole, which is a proposed District rule, it is the most appropriate public agency to act as lead agency (CEQA Guidelines[5] §15051 (b)).

CEQA requires that all potential adverse environmental impacts of proposed projects be evaluated and that methods to reduce or avoid identified significant adverse environmental impacts of these projects be implemented if feasible. The purpose of the CEQA process is to inform the lead agency, responsible agencies, decision makers and the general public of potential adverse environmental impacts that could result from implementing PR 1430 (the proposed project) and to identify feasible mitigation measures or alternatives, when an impact is significant.

Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written documents in lieu of an environmental impact report once the Secretary of the Resources Agency has certified the regulatory program. The SCAQMD's regulatory program was certified by the Secretary of Resources Agency on March 1, 1989, and has been adopted as SCAQMD Rule 110 – Rule Adoption Procedures to Assure Protection and Enhancement of the Environment.

PR 1430 would regulate toxic emissions, particulate matter emissions, and odors from metal grinding and metal cutting operations at metal forging facilities. Because the proposed project requires discretionary approval by a public agency, it is a "project" as defined by CEQA. The proposed project will reduce metal particulate matter (PM) emissions, and the odors and associated health risks associated with these emissions and will provide an overall environmental benefit to air quality. However, SCAQMD's review of the proposed project also shows that implementation of PR 1430 may also create secondary adverse effects on the environment. SCAQMD's review of the secondary adverse effects shows that PR 1430 would not have a significant adverse effect on the environment. Thus, the type of CEQA document appropriate for the proposed project is an Environmental Assessment (EA). The EA is a substitute CEQA document, prepared in lieu of a Negative Declaration (CEQA Guidelines §15252), pursuant to the SCAQMD's Certified Regulatory Program (CEQA Guidelines §15251 (l); codified in SCAQMD Rule 110). The EA is also a public disclosure document intended to: 1) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental impacts of the proposed project; and, 2) be used as a tool by decision makers to facilitate decision making on the proposed project.

The SCAQMD, as lead agency for the proposed project, ~~has~~ prepared the<u>is</u> Draft EA showing no significant adverse impacts pursuant to its Certified Regulatory Program. The<u>is</u> Draft EA includes an Environmental Checklist and project description. The Environmental Checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. Because PR 1430 will have no statewide, regional or areawide significance, no CEQA scoping meeting is required to be held for the proposed project pursuant to Public Resources Code §21083.9(a)(2). Further,

[5] The CEQA Guidelines are codified at Title 14 California Code of Regulations §15000 *et seq.*

pursuant to CEQA Guidelines §15252, since no significant adverse impacts were identified, no alternatives or mitigation measures are required to be included in the~~is~~ Draft EA. The analysis in Chapter 2 supports the conclusion of no significant adverse environmental impacts. The Draft EA was released for a 30-day public review and comment period from January 11, 2017 to February 10, 2017 and three comment letters were received. All ~~Any~~ comments received during the public comment period on the analysis presented in the~~is~~ Draft EA ~~will~~ have been responded to and included in Appendix E of ~~the~~ this Final EA.

Subsequent to release of the Draft EA, minor modifications were made to PR 1430 and some of the revisions were made in response to verbal and written comments on the project's effects. Staff has reviewed the modifications to PR 1430 and concluded that none of the modifications constitute significant new information or a substantial increase in the severity of an environmental impact, nor provide new information of substantial importance relative to the draft document. In addition, revisions to PR 1430 in response to verbal or written comments would not create new, avoidable significant effects. As a result, these minor revisions do not require recirculation of the EA pursuant to CEQA Guidelines §15073.5 and §15088.5.

Prior to making a decision on the adoption of PR 1430, the SCAQMD Governing Board must review and certify the Final EA as providing adequate information on the potential adverse environmental impacts that may occur as a result of adopting PR 1430.

PROJECT LOCATION

PR 1430 would affect 22 metal forging facilities located within SCAQMD's jurisdiction, with 14 located in Los Angeles County, four located in Orange County, and four located in San Bernardino County. The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin (Basin) (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. A federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of Riverside County and the SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (see Figure 1-1).

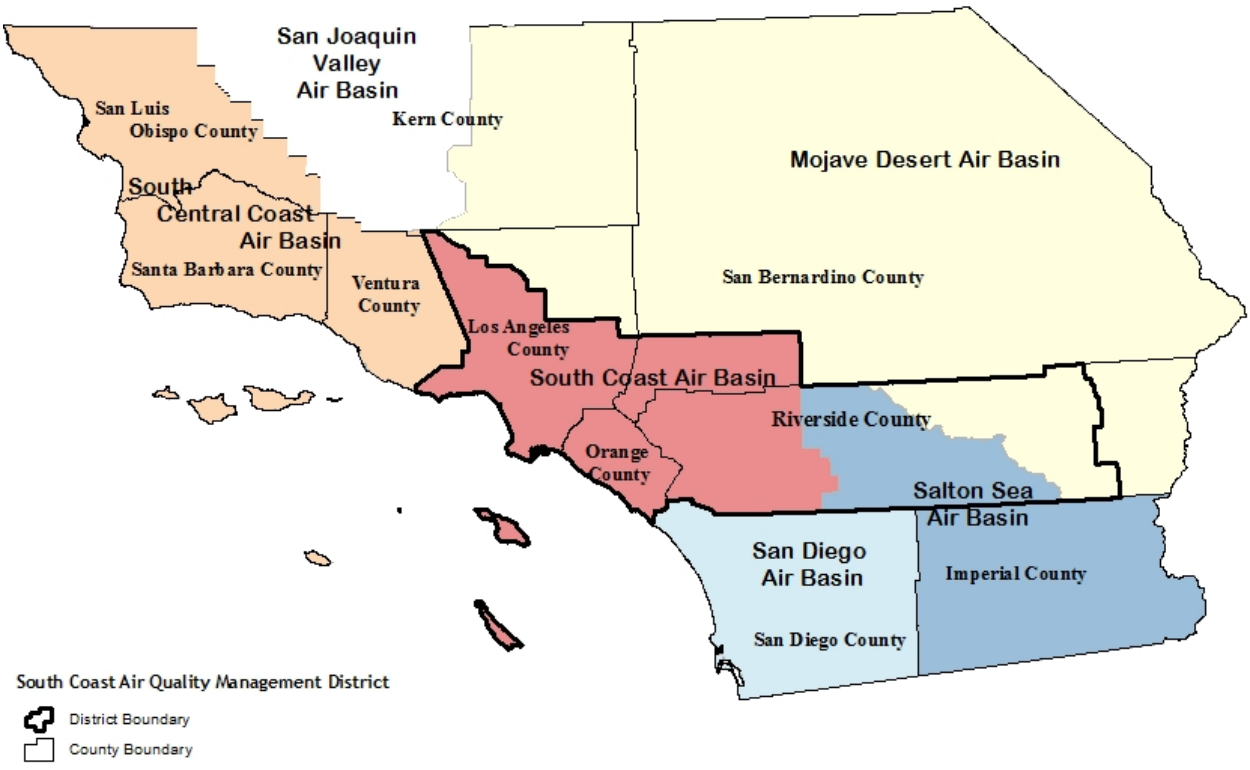


Figure 1-1
Southern California Air Basins

PROJECT BACKGROUND

Metal grinding and metal cutting operations at metal forging facilities are currently exempt from SCAQMD permitting requirements and there are currently no SCAQMD source-specific regulatory requirements for these activities. Through the rule development process, SCAQMD staff have obtained additional information about metal grinding and metal cutting operations at metal forging facilities from collecting particulate samples, conducting source tests, conducting ambient monitoring, and site visits. The SCAQMD has identified 22 active metal forging facilities in the District that conduct metal grinding operations and SCAQMD staff visited many of these facilities. The following are key findings from the site visits:

- Prior to November 2016, there were five facilities that were conducting metal grinding operations in the open air. Because of the fugitive nature of grinding operations, with no containment structure such as an enclosure and no air pollution control device, the metal particulates were being released in the open air and into the community. One of the five facilities recently moved their grinding operations within a building enclosure and is in the process of constructing a total enclosure. Another facility is in the process of moving their grinding operations within an enclosure also.
- Although air pollution control equipment is not currently required by the SCAQMD, 14 forging facilities currently have some type of air pollution control device. However, many

baghouses did not appear to have proper ventilation, operation, and maintenance of their air pollution control equipment.

- Housekeeping measures varied at each facility. There was variation in the cleaning method, such as using brooms to mobile vacuum sweepers, variation in the frequency, and variation in the areas cleaned, such as cleaning the inside and/or outside of a building.

As a result, some facilities were identified as currently conducting metal grinding and metal cutting operations with no air pollution control equipment while other facilities were identified as having air pollution control equipment that are not properly operated and maintained.

Metal grinding is a common material removal and surface preparation process that shapes and finishes the surfaces of metal parts. Both heavy and light industrial processes such as metal foundries and forging and plating operations that produce parts for the aerospace, automotive, and oil and gas industry conduct metal grinding. The grinding process employs an abrasive device, such as a rotating wheel that is brought into controlled contact with the metal part's surface, to smooth slight imperfections and remove tiny metal pieces from the part. The grinding process generates metallic chips and dust as a by-product.

Metal grinding is prone to generate fugitive metal particulate, particularly if the grinding operation is not properly controlled. The results of sampling data collected by SCAQMD staff at multiple forging facilities have shown that fugitive metallic dust generated from metal grinding activities contain toxic air contaminants (TACs) such as cadmium, hexavalent chromium, cobalt, and nickel. Additionally, extensive ambient air monitoring conducted at one forging facility has confirmed elevated concentrations of nickel in the ambient air due to metal grinding activities.

In conclusion, SCAQMD staff determined that PR 1430 is necessary to reduce toxics and metal particulate emissions from metal grinding and metal cutting operations at metal forging facilities. It would ensure that these operations have the appropriate pollution control equipment, are conducted within an enclosure so that fugitive emissions that do not make it to the control device are contained, and basic housekeeping requirements are followed to ensure any accumulation of metal particulate in or around grinding operations is not re-entrained into the air or tracked outside of the facility.

TECHNOLOGY OVERVIEW

The following discussion provides a general overview of the manufacturing processes at metal forging facilities, the associated emission sources, and emission control options.

Metal Forging

Forging is a manufacturing process where metal is pressed, pounded, or squeezed under great pressure into high strength parts known as forgings. The process is normally performed hot by preheating the metal to a desired temperature before it is worked. Any metal can be forged, however, some of the most common metals include, carbon steel, alloy steel, stainless steel, very hard tool steels, aluminum, titanium, brass, copper, cobalt, nickel, and molybdenum. These metals are found in billets or ingots that are delivered to the respective forging company. The forging industry is composed of plants that: make parts to order for customers (custom forgings), make parts for their own company's internal use (captive forgings), or make standard parts for resale (catalog forgings). Metal forging creates parts that vary in size, shape, and sophistication. Some of the largest customer markets include: aerospace, national defense, automotive, oil industry,

agriculture, construction, and general industrial equipment. The applicable NAICS code for ~~these industries are 332111, Iron and Steel Forging, and 332112 Nonferrous Forgings~~ metal forging facilities subject to PR 1430 are all classified as being in the fabricated metal manufacturing sector (NAICS 332). The following process description reflects the operational characteristics at metal forging facilities. Metal forging is done because it strengthens the material by sealing cracks and closing empty spaces within the metal. The hot forging process will highly reduce or eliminate inclusions in the forged part by breaking up impurities and redistributing their material throughout the metal work. Forging a metal will alter the metal's grain structure creating a material of increased strength. This makes forging more advantageous than casting or machining. In metal forging operations, a metal ingot or billet is prepared to the correct pre-dimensions prior to going through forging. This can include cutting, sawing, grinding, or torch cutting. The following paragraphs describe the various processes involved in preparation of the forging process:

Billet Cutting or Sawing

A processed metal billet or ingot is received by the metal forging facility. In order to forge the piece of metal, the metal forging facility may need to reduce the size. This is done by cutting or sawing. At the metal forging facility, the unprocessed metal billet or ingot is place in a sawing machine. The sawing machine is equipped with a blade capable of cutting into a metal billet or ingot at a slow rate. Typically, a continuous flow of metal removal fluid and coolant is supplied where the blade makes contact with the metal. This helps maintain the blade at a cooler temperature with a co-benefit of preventing metal emissions. The metal ingot or billet is cut to the desired dimensions.

Metal Grinding Operations

Irregularities observed on the billet or ingot can be removed via grinding which will create the desired finish and dimensions prior to forging. Based on site visits to the forging facilities, SCAQMD staff identified five categories of metal grinding activities: billet grinding, swing grinding, stand grinding, large and small hand grinding, and torch cutting. Based on observations, all of these activities have the ability to generate fugitive metal particulates if not properly controlled. Each of these metal grinding activities are discussed below.

Billet grinding

Billet grinding consists of large traveling grinders designed to prepare large billets prior to forging. The billet grinder would traverse the entire length of the billet, going back and forth to create the appropriate dimensions. All billet grinders that will be subject to PR 1430 are currently vented to baghouses without high efficiency particulate arrestor (HEPA) filters.

Swing grinding

Swing grinders are rugged, heavy duty grinders with full lateral movement to prepare medium sized billets. An employee manually operates them. Multiple levels of control were observed ranging from a baghouse with HEPA filters to no air pollution controls.

Stand grinding

Stand grinders are designed for smaller castings and forging. Mounted in a permanent position, utility grinders have a slotting wheel on one end for reaching into recesses of the material. Multiple levels of controls were observed ranging from venting to a baghouse to not venting to any air pollution controls.

Large and small grinding

Hand grinding involves using power tools for preparing, cutting, grinding, and polishing forgings of various sizes. Multiple hand grinding stations can be in one room or one area. Larger forgings utilize larger hand grinders, while smaller forgings utilize smaller hand grinders.

Torch Cutting

Torch cutting is a process by which metal is preheated with a flame and then oxidized rapidly and removed by a jet of oxygen issued centrally through the preheating flame. Torch cutting in the metal forging industry often uses acetylene gas and is used to remove flash (excess metal) from large metal parts that have been forged. Basic torch cutting equipment consists of two high-pressure cylinders (one apiece for oxygen and acetylene) and two corresponding pressure regulators. A dual-line hose transfers oxygen and acetylene from the regulators to the torch handle. The torch handle can hold a cutting attachment or cutting tip that controls the thickness of metal being cut, along with the gas pressures set at the regulators. Torches that use oxygen and acetylene reach a working temperature of 5,620 degrees Fahrenheit (^{o}F).

Heating

Metal billets or ingot are heated to the desired temperature prior to and/or during the forging process. The heated metal billets or ingots become malleable and are able to be forged. Aluminum alloys are heated to 800 °F, while titanium and nickel are heated to temperatures between 1,700 and 2,300 °F. Furnaces range in heating capacity and size, but typically use natural gas for heating. The combustion of natural gas produces NO_x, SO_x, and combustion related PM emissions. The furnaces are subject to SCAQMD permitting requirements and are evaluated by SCAQMD staff. NO_x is regulated by SCAQMD Rule 1147 - NO_x Reductions from Miscellaneous Sources for Non-RECLAIM facilities. Facilities with NO_x emissions that exceed more than four tons per year are regulated by SCAQMD Regulation XX - Regional Clean Air Incentives Market (RECLAIM). Non-combustion related emissions, such as emissions generated in the oven space of the furnace produced as result of refractory brick decomposition or off gassing of metals are unknown at this time. Further studies of non-combustion related emissions from metal furnaces are needed.

Forging

Forging includes pressing, hammering, rolling, or piercing of metal using a mechanical tool. The type of forges discussed herein are drop forge press, hammer press, and ring

rollers. During the forging process, a lubricant is applied to facilitate the release of die and forging material.

Drop Forge
A drop forge is a forging made in a closed or impression die under a drop or steam hammer. A closed die forging is formed to the required shape and size by machined impression in specifically prepared dies that exert three-dimensional control on the workpiece. Excess metal, known as flash, that did not form in the die will be removed in finishing operations. Open die forging involves the repeated striking of metal in a die to get the desired dimension. The metal piece may be rotated or moved around to get the desired shape.

Hammer Press
It is a forging made by means of a hammer. The action of the hammer is that of an instantaneous application of pressure in the form of a sudden blow.

Ring Rollers
A metal ring preform is rolled between two rolls that move toward each other to form a continuously reducing gap.

Lubricant
A liquid or powder lubricant is applied to facilitate the release of the die and forged metal. The lubricant can be applied multiple times depending on the forging operation. Visible emissions are observed when lubricants contact the die and forged metal. VOC levels in lubricants are regulated by SCAQMD Rule 1144 - Metalworking Fluids and Direct-Contact Lubricants. Similar to non-combustion emissions from the furnace, emissions from heated processes need further study.

Finishing Operations
Following the creation of a forging, physical or chemical methods are utilized to produce dimensional corrections to the forging or to perform surface treatment. While preparation operations remove irregularities, finishing operations remove flashing and scale deposits. Methods observed include abrasive blasting, buffing/polishing, sawing/cutting, and grinding.

Abrasive Blasting
Abrasive blasting is a stream of abrasive material that is propelled against a surface under high pressure to alter the surface. The abrasive material can be composed of metal, silica, or other material. The abrasive blasting process is used to smooth or "clean" forged material. Fugitive metal particulates from the forging and shot material may be generated if not adequately controlled. These emissions can be controlled by operating in a blast cabinet or room vented to an air pollution control system. Varying housekeeping measures can be implemented to reduce the accumulation of particles that can become fugitive. SCAQMD permits are required if the volume of the blasting cabinet is greater than 53 cubic feet. Abrasive blasting is regulated under SCAQMD Rule 1140 - Abrasive Blasting.

Buffing/Polishing
Polishing and buffing are finishing processes for smoothing a workpiece's surface using an abrasive and a work wheel or a leather strop.

Sawing/Cutting
It is used to remove portions of forged metal that are not desired in the finished product. This can be flash material or parts of the forging that may be needed to be changed to meet the correct dimensions.

Grinding
Similar to the metal grinding activities conducted during the pre-metal forging operations, grinding is also conducted during the post-metal forging operations to further refine the metal surfaces. The grinding types include billet grinding, swing grinding, stand grinding, large and small hand grinding, and torch cutting. All of these activities have the ability to generate fugitive metal particulates if not properly controlled.

Controlling Emissions From Metal Forging
PR 1430 has been developed in order to reduce metal particulate emissions, health risks and odors from metal grinding and metal cutting operations at metal forging facilities. The key emission release points for metal grinding and metal cutting activities are point source emission stacks and fugitive emissions. Uncontrolled grinding that is conducted in the open air is of greatest concern because emissions are generated at the point of contact where the abrasion or removal of metal occurs. These metal particulates get entrained in the air and dispersed both on and off the property depending on meteorological conditions or they accumulate in metal removal areas and get tracked off the property by foot or vehicular traffic. For these reasons, an air pollution control system with effective capture and control efficiencies is necessary. In addition, enclosures and capture technology are essential for capturing the emissions to be fed into the air pollution control system.

Potential methods for reducing emissions and odors from metal grinding and metal cutting operations include: 1) relocating metal grinding and metal cutting activities within permanent enclosures to ensure that fugitive emissions that are not routed to an air pollution control device are contained within the enclosure; 2) capturing and controlling the metallic chips and dust through add-on air pollution control devices such as cyclones, baghouses and HEPA filter technology; 3) employing routine housekeeping measures such as wet cleaning or vacuuming to ensure that any accumulation of metal particulates in or around grinding and cutting operations is not re-entrained into the air or tracked outside of the facility; 4) following material storage and disposal procedures; and, 5) conducting routine maintenance of air pollution control devices.

The following discussion describes the various strategies to first contain and collect emissions and then route emissions from point sources to air pollution control equipment.

Containment and Collection Strategies

Containment
An enclosure is a structure that can be an effective containment tool to ensure that fugitive metal dust generated from grinding activities conducted inside the enclosure remains inside the enclosure. The design of the structure will determine the effectiveness of the enclosure's containment ability as well as the collection efficiency of air pollution control devices located downstream. As illustrated in Figure 1-2, there are four types of enclosures: Temporary Enclosure; Building; Total Enclosure; Total Enclosure with Negative Air. The following provides a general description of each type of enclosure.

- A temporary enclosure is a structure comprised of walls or partitions on at least three sides or three-quarters of the perimeter with a floor and a roof. As shown in the figure below, one side of the structure is open.
- A building is a type of enclosure that is a permanent containment structure, completely enclosed with a floor, four walls, or an entire perimeter, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, and run-off), with openings to allow ingress and egress for people and vehicles, but is not necessarily free of breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust to escape.
- A total enclosure is a permanent containment structure, completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, and run-off), with limited openings to allow access and egress for people and vehicles, that is free of breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust to escape.
- A total enclosure with negative air (e.g., air being pulled or drawn into the building) that is vented to pollution control equipment is a total enclosure with negative airflow. This total enclosure must meet the industrial ventilation guidelines at each opening and the air within the enclosure is vented to an air pollution control device.

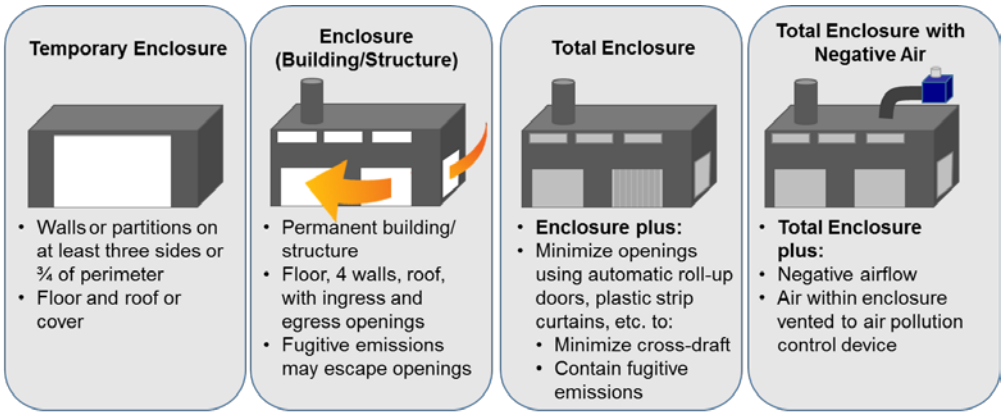


Figure 1-2
Types of Enclosures

Collection

A collection system allows air and emissions of particulate matter (PM) to be collected. Designing air pollution control equipment with ventilation in a manner that is consistent with the Industrial Ventilation Guidelines will ensure that metal PM can be captured and delivered to the air pollution control equipment. The collection system can be designed to capture emissions from an individual point source such as a grinding station, or from the entire enclosure. The collection system consists of an intake port, ducting, and a device that creates negative air to draw the emissions away from the individual point source or the entire enclosure. In order to consistently achieve a desired capture efficiency, the collection system needs to be properly maintained, which includes assuring proper intake flow rate, duct integrity, and proper positioning of the grinding activity to the intake vent.

Point Source Emission Control Technologies

Baghouses, HEPA filters, and cyclones, are technologies typically used to control PM emissions at metal forging facilities. These technologies can be connected in series to further control PM emissions and reduce the wear and tear on downstream processes.

Baghouse

A baghouse is an air filtration control device designed to remove PM from an exhaust gas stream using filter bags, cartridge-type filters, or envelope-type filters. A baghouse consists of the following components: filter medium and housing for the filter, filter cleaning device, collection hopper, shell, and fan. Most baghouse designs in the United States consist of long cylindrical tubes (bags) made of fabric which acts as the filter medium. A baghouse functions like a vacuum cleaner with a fan either blowing air from the grinding source through (positive pressure) the filter or drawing air into (negative pressure) the filter. When PM laden air flows to the inlet of a baghouse, the PM is captured in the filter bags inside the baghouse and filtered air flows from the outlet of the baghouse. Dust layers (dust cakes) deposit on the surface of the bags which need to be cleaned periodically to ensure proper baghouse function.

Effective performance of a baghouse is determined by pressure drop which is a measurement of the difference in air pressure between the clean and dirty sides of the filter. Static pressure gauges can be installed at the inlet and outlet of the fabric filter to determine the pressure drop across the filter. In addition, baghouses can be equipped with a bag leak detection system (BLDS) to continuously monitor the performance of the baghouse functions by detecting early bag leak or malfunction. A BLDS consists of a stainless steel probe that is energized with a direct current (DC) electrical voltage. When the particles flow near the probe placed in the PM laden exhaust gas stream, the small current changes (called triboelectric current) in its electric field are measured.

Pressure drop monitoring is a useful indicator of baghouse performance since pressure drop measurements can help determine if the filter media is being properly cleaned and whether the baghouse is operating in accordance with manufacturer specifications. For example, during operation of the baghouse, an increased pressure drop signals that the filter media is becoming clogged and needs to be cleaned. Similarly, a low pressure drop may indicate that there are holes in the filter media or a mechanical failure of baghouse components. In either case, there will be a reduction in the baghouse's ability to efficiently capture and control PM emissions. For these reasons, the filter media need to be cleaned periodically to prevent excessive increases in pressure drop, leaking bag, and improper baghouse function.

Baghouses are typically cleaned in sections, with jets of counter-flowing air used to blow dust build-up off of the filter and into a hopper. For many baghouse installations, the baghouse follows a routine cycle with the pressure drop increasing as the bag becomes coated with dust, and dropping back to a baseline value after it is cleaned. Common types of baghouses include reverse-air, pulse-jet and cartridge type baghouse. A reverse air-type baghouse uses a low pressure flow of air to break the dust cake and clean the bags of material build-up. Cleaning air is supplied by a separate fan which is normally smaller than the main stream fan, since only one compartment is cleaned at a time. A pulse jet-type baghouse uses a high pressure jet of compressed air to back-flush the bags. Cleaning is performed while the baghouse remains in operation. Cartridge (cylindrical) type filters

have pleated, non-woven filter media supported on a perforated metal cartridge. Due to its pleated design, total filtering area is greater than in a conventional bag of the same diameter, resulting in reduced air-to-cloth ratio, pressure drop, and overall collector size. Too heavily loaded cartridges can either be cleaned by a pulse jet compressed air or replaced with new cartridges. Cartridge type filters have high particle collection efficiency of, at a minimum, 99.9 percent, and are usually used for industrial process handing exhaust gas flow rates less than 50,000 cubic feet per minute (cfm).

The National Fire Protection Association has special designations for deflagrations (e.g., explosion prevention) from metal dust. Therefore, operators of metal grinding activities that require baghouse emission control technologies will also need to select reliable, economical and effective means of explosion control such as baghouse explosion suppression, containment and venting. Additional information pertaining to these types of protective measures is available in Chapter 8 of the *Industrial Ventilation, A Manual for Recommended Practice for Design* 28th Edition, published by the American Conference of Governmental Industrial Hygienists, ©2013.

High Efficiency Particulate Arrestor (HEPA) Filters

HEPA filters are capable of capturing fine PM as small as 0.3 micron (µm) diameter or larger. HEPA filters have a minimum efficiency rating of 99.97% which means that they have a high collection efficiency when compared to other PM control devices. HEPA filters are best utilized in situations when a high collection efficiency of submicron PM is necessary, when toxic and or hazardous PM cannot be cleaned from the filter, or when the filter is difficult to clean. Unlike bags or cartridge filters in baghouses, HEPA filters are not automatically cleaned. When a HEPA filter element becomes loaded with PM, the filter element is replaced and the loaded filter is disposed of as hazardous waste.

A HEPA filter is generally installed as the final component in a PM collection system downstream from other PM collection devices. The use of a HEPA filter requires a pre-filter upstream to remove large PM for dust concentrations greater that 0.03 grams per square centimeter (g/cm^2) or 0.06 pounds per square feet squared (lbs/ft^2). In metal grinding applications at forging facilities, a mechanical collector such as a cyclone can be used as a pre-filter to be followed by a standard baghouse or cartridge filters in order to reduce larger diameter PM prior to venting emissions to a HEPA filter.

Cyclone

A cyclone is typically used as a pre-filter or pre-cleaner and is located upstream of a baghouse or HEPA filter to capture the largest particles. A cyclone is not equipped with its own blower to draw in the PM laden exhaust stream. Instead, particles are forced to move toward the cyclone walls by the centrifugal force of the spinning exhaust causing the large particles to be removed by inertia. Since small particles may be too small to be captured in a cyclone, secondary air pollution control such as a baghouse or HEPA filter are used to capture PM that escapes from the cyclone.

PROJECT DESCRIPTION

The purpose of PR 1430 is to reduce PM, toxic emissions, and odors from metal grinding and metal cutting operations at metal forging facilities. As previously explained, metal grinding and metal cutting operations are currently exempt from SCAQMD permits and are unregulated

emissions sources. PR 1430 establishes standards for metal grinding and cutting options for both point sources and fugitive emission sources. Point sources are addressed through requirements for emission control devices, emission standards, and periodic monitoring. Fugitive PM emissions are addressed through requirements for total enclosures, housekeeping, and maintenance and repair activities. Additionally, signage, reporting, and recordkeeping requirements are also being proposed to ensure compliance. The following is a detailed summary of the key elements contained in PR 1430. A copy of PR 1430 can be found in Appendix A.

Purpose – subdivision (a)

Subdivision (a) establishes the purpose of PR 1430 which is to reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities.

Applicability – subdivision (b)

Subdivision (b) explains that PR 1430 applies to metal forging facilities that conduct metal grinding or cutting operations onsite. Subdivision (b) also clarifies that PR 1430 does not apply to metal grinding or cutting operations that are conducted under a continuous flood of metal removal fluid, or grinding activities conducted to maintain or repair equipment at a facility.

Definitions – subdivision (c)

Subdivision (c) includes definitions of the following terms: Bag Leak Detection System; Billet; Billet Grinding; Building; Capture Velocity; Confirmed Odor Complaint; Duct Section; Effective Zone; Emission Collection System; Emission Control Device; Fugitive Metal Dust; Hand Grinding; HEPA; Maintenance and Repair Activity; Metal; Metal Cutting; Metal Forging Facility; ~~Metal Grinding~~; Metal Grinding Operation; Metal Removal Fluid; ~~School; Sensitive Receptor;~~ Small ~~Hand~~Part Grinding; Stand Grinding; Swing Grinding; Temporary Enclosure; Torch Cutting; and, Total Enclosure.

Total Enclosures – subdivision (d)

Paragraph (d)(1) prohibits metal grinding or metal cutting operations, or small hand grinding activities from occurring outside of a temporary enclosure, building, or total enclosure.

Paragraph (d)(2) allows metal grinding or metal cutting operations that occur inside a building and exist at the time PR 1430 is adopted to continue to operate until ~~the requirements in paragraph (d)(3) are met~~a total enclosure is completed.

Subp~~P~~aragraph (d)(~~3~~2)(A) requires existing metal grinding or metal cutting operations that occur inside a building to conduct these operations in a total enclosure within six months of rule adoption. Subp~~P~~aragraph (d)(2)(B) requires existing metal grinding or metal cutting operations that occur inside a temporary enclosure or building to conduct these operations in a total enclosure within 12 months of rule adoption, provided the owner or operator provides written notice to the Executive Officer within 60 days after [Date of Rule Adoption] that a new total enclosure will be constructed.

In addition, paragraph (d)(~~3~~2) also requires an owner or operator to minimize fugitive metal dust emissions from passages, doorways, and bay doors by installing automatic roll-up doors, plastic strip curtains, or vestibules for doors and openings in the total enclosure. This paragraph also allows for alternative methods to minimize the release of fugitive metal dust from the total enclosure provided that the owner or operator can demonstrate to the Executive Officer an equivalent or more effective method can be applied.

~~Paragraph (d)(4) requires metal grinding or metal cutting operations that do not currently occur inside a building to conduct these operations in a total enclosure within 12 months of rule adoption. In addition, p~~Paragraph (d)(~~4~~3) ~~also~~ allows the use of a temporary enclosure or building until a total enclosure is completed provided that cleanings by wet cleaning or HEPA vacuum after or at the end of each operating shift are conducted.

Paragraph (d)(~~5~~4) requires all types of enclosures to be designed in a manner that does not conflict with requirements set forth by the federal Occupational Safety and Health Administration (OSHA) or the California Division of Occupational Safety and Health (CAL-OSHA) regarding worker safety.

Paragraph (d)(~~6~~5) requires inspections of any temporary enclosure or total enclosure at least once a calendar month for breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust.

Paragraph (d)(6) requires that metal grinding or metal cutting operations be immediately stopped if inspection of a total enclosure where these operations are conducted reveals a break, crack, gap or deterioration which results in fugitive metal dust. The metal grinding or metal cutting operation may resume until the total enclosure is repaired pursuant to paragraph (d)(7) if the owner or operator implements temporary measures to ensure that no fugitive metal dust results from the break, crack, gap or deterioration.

Paragraph (d)(7) requires any breaks, cracks, gaps, or deterioration from any ~~temporary enclosure or~~ total enclosure to be repaired within 72 hours of discovery. An owner or operator may request an extension beyond the 72-hour limit if the request is submitted before the 72-hour time limit has expired, and the owner or operator must provide information to substantiate that the repair will take longer than 72 hours or that the equipment, parts or materials needed for the repair cannot be obtained within 72 hours.

Paragraph (d)(8) requires existing metal grinding or metal cutting operations that occur inside a total enclosure that is located within ~~3~~500 feet of any ~~sensitive receptor~~ residence or 1,000 feet of any public or private school to vent the total enclosure to air pollution control equipment in accordance with negative air specifications within six months of receiving a Permit to Construct from SCAQMD for the air pollution control equipment. Residences include private homes, condominiums, apartments, and living quarters; daycare centers; health care facilities such as hospitals or retirement and nursing homes; long-term care hospitals, hospices, prisons, and dormitories or similar live-in housing. Public or private school includes juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including kindergarten and grades 1 through 12, inclusive; and early head start schools, head start schools, and preschools. This provision does apply to any private school in which education is primarily conducted in private homes.

Metal Grinding and Cutting Emission Requirements – subdivision (e)

Paragraph (e)(1) requires emissions from all metal grinding and metal cutting operations to be vented to an air pollution control device no later than 6 months after a SCAQMD Permit to Construct is issued for the air pollution control device. Paragraph (e)(1) also establishes a PM outlet concentration of ~~0.01~~ 0.002 grains of particulate matter per dry standard cubic foot (dscf) for the air pollution control device as determined by a source test. ~~SCAQMD staff is considering a PM outlet concentration of 0.002 grains of particulate matter per dry standard cubic foot, which~~

~~would be more representative of the emission rate after fitting the control device with HEPA filters as required by paragraph (e)(2) as discussed below.~~

Paragraph (e)(2) requires an air pollution control device to be fitted with HEPA filters, or filter media rated by the manufacturer to achieve a minimum of 99.97% control efficiency for 0.3 µm particles, and designed in a manner that does not conflict with requirements or guidelines set forth by the OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety.

Paragraph (e)(3) allows the use of alternative filter media rated by the manufacturer to achieve a minimum of 98% control efficiency for 0.3 µm particles provided that: 1) billet grinding, metal cutting, swing grinding, or torch cutting is not conducted; 2) a combination of 10 or fewer hand grinding units or stand grinding stations are operated; and, 3) the toxic emissions from the air pollution control device does not exceed the screening levels identified in Table I – Toxic Air Contaminants in Rule 1401 - New Source Review of Toxic Air Contaminants, or does not result in a cancer risk of over one in a million.

Paragraph (e)(4) requires the air pollution control device to be operated at the minimum hood induced capture velocity specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists.

Paragraph (e)(5) requires that within 30 days of rule adoption, permanent visual indicators or markings at all hand grinding, stand grinding, swing grinding, and torch cutting stations be added that identify the maximum distance metal grinding may occur from the air pollution control device to ensure the emission collection system meets the requirements of subdivision (e). Paragraph (e)(5) also requires all metal grinding activity to be conducted in front of the hood face and within the designated maximum distance metal area without obstructing the air flow between the metal grinding operation and the hood for the emission collection system.

Paragraph (e)(6) requires either the removal of any weather cap from any stack that is a source of metal PM emissions or the installation of a butterfly valve on the stack no later than 30 days after rule adoption.

Housekeeping Requirements – subdivision (f)

Subdivision (f) requires housekeeping practices to be implemented no later than 30 days after rule adoption.

Paragraph (f)(1) requires semi-annual wet cleaning or HEPA vacuuming to be conducted, no more than six calendar months apart, on roof tops for total enclosures that house areas associated with metal grinding or metal cutting operations. ~~Paragraph (f)(1) does not apply to areas associated with the storage of raw, unprocessed metal containing materials, finished metal containing products, storage of metal grinding waste, and non-metal grinding or metal cutting activities.~~

Paragraph (f)(2) requires daily wet cleaning or HEPA vacuuming in specified areas where metal grinding, metal cutting, or small hand grinding is conducted.

Paragraph (f)(3) requires the following housekeeping measures to be conducted: 1) monthly wet cleaning or HEPA vacuuming of floors of a temporary enclosure, building or total enclosure areas where metal grinding or metal cutting operations occur; and, 2) the storage in sealed containers of

all fugitive metal dust producing materials such as metal containing waste generated from conducting housekeeping and maintenance and repair activities, unless located within a total enclosure. Paragraph (f)(3) also prohibits conducting compressed air cleaning operations or dry sweeping within 30 feet of any metal cutting or metal grinding operation, unless the compressed air cleaning operation or dry sweeping is vented to an air pollution control device.

Maintenance and Repair Activity Requirements – subdivision (g)

On and after 30 days after rule adoption, subdivision (g) requires the following requirements when certain maintenance and repair activities are conducted. PR 1430 defines maintenance and repair activities as those that are conducted outside of a total enclosure that generates or has the potential to generate fugitive metal dust during maintenance or repair activities on any emission control device that vents metal grinding or cutting operations; or replacement or removal of any duct section used to vent metal grinding or cutting operations.

Paragraph (g)(1) requires the floors located within 20 feet of where the maintenance or repair activity occurred to be wet cleaned or HEPA vacuumed within one hour after completion of the maintenance or repair activity.

Paragraph (g)(2) requires maintenance and repair activities that are not conducted within a building, temporary enclosure, ~~or total enclosure~~ to be stopped immediately when instantaneous wind speeds are greater than or equal to 20 miles per hour (mph).

Paragraph (g)(3) requires all metal-contaminated equipment and materials used for maintenance and repair activities to be wet cleaned or HEPA vacuumed immediately after completion of work in a manner that does not generate fugitive metal dust.

Source Tests – subdivision (h)

Paragraph (h)(1) requires the following source tests for any emission control device venting metal grinding or metal cutting operations: 1) a source test for PM emissions once every 12 months to demonstrate compliance with the emission standard and capture velocity requirements in subdivision (e) unless the source test demonstrates no more than 50% of the PM emissions standard then the source test may be performed no later than 24 months after the date of the most recent test; ~~and,~~ 2) a source test for hexavalent chromium and multiple metal emissions once every 48 months~~.~~; and , 3) the owner or operator of a metal forging facility is exempt from a source test for hexavalent chromium if a metals analysis by X-ray fluorescence (XRF) of bulk samples from the baghouse catch demonstrates a total chromium concentration of no greater than 1% by weight. The metals analysis by XRF is required to be conducted upon each removal or disposal of the baghouse catch. A metals analysis by XRF that demonstrates a total chromium greater than 1% by weight would require the owner or operator to conduct a hexavalent chromium source test for the associated baghouse within 60 days of the XRF analysis with subsequent source tests conducted every 48 months.

Paragraph (h)(2) requires a source test protocol to demonstrate compliance with the requirements in paragraph (h)(1) to be submitted no later than 60 days after rule adoption for the initial source test and no later than 90 days prior to the compliance deadline for subsequent source tests. Paragraph (h)(2) allows the use of the initial source test protocol for subsequent source tests if there are no changes.

Paragraph (h)(3) requires a source test protocol to demonstrate compliance with paragraph (h)(1) no later than 30 days after initial start-up of a new or modified metal grinding or metal cutting

emission control device that occurs on or after the date of rule adoption and no later than 90 days prior to the compliance deadline for subsequent source tests. Paragraph (h)(3) allows the use of the initial source test protocol for subsequent source tests if there are no changes.

Paragraph (h)(4) requires the source test protocol to include the source test criteria, all assumptions, required data, and calculated targets for testing the following: 1) target particulate mass emission standard; 2) preliminary target pollutant analytical data; 3) planned sampling parameters; and, 4) information on equipment, logistics, personnel, and other resources necessary for an efficient and coordinated test.

Paragraph (h)(5) requires source tests specified in paragraph (h)(1) to be conducted for an emission control device no later than 60 days from approval of the source test protocol, unless otherwise approved in writing by the Executive Officer.

Paragraph (h)(6) requires that if the pressure across the HEPA filter is not maintained pursuant to paragraph (i)(4) then a source test for the emissions control device that triggered the monitored pressure change must be performed within 60 days. A source test must be conducted for the following: PM emissions, multiple metals, and hexavalent chromium unless the facility conducts a metals analysis with XRF that demonstrates all bulk samples from the baghouse catch are no greater than a concentration of 1% by weight for total chromium.

Paragraph (h)(~~6~~7) requires the owner or operator to provide written notification within 10 calendar days prior to conducting any source test.

Paragraph (h)(~~7~~8) requires the owner or operator to provide notification by calling 1-800-CUT-SMOG within three business days (Monday through Friday) of when the facility knew or should have known of any source test result that exceeds the emission standard. Paragraph (h)(7) also requires the owner or operator to provide written notification containing the source test results within seven business days of the initial notification by phone.

Paragraph (h)(~~8~~9) establishes the applicable test methods that may be used when conducting a source test during typical operating conditions.

Paragraph (h)(~~9~~10) allows the use of alternative or equivalent test methods as defined in 40 CFR 60.2 when conducting a source test during typical operating conditions provided that written approval is granted by the SCAQMD's Executive Officer, in addition to the California Air Resources Board (CARB), or the U.S. EPA, as applicable.

Paragraph (h)(~~10~~11) requires the use of an approved test laboratory pursuant to the SCAQMD Laboratory Approval Program. Paragraph (h)(10) also allows the use of a non-approved test laboratory if granted by the Executive Officer on a case-by-case basis based on SCAQMD protocols and procedures.

Paragraph (h)(~~11~~12) requires a specific set of test conditions to be applied, which are subject to approval by the Executive Officer, when more than one source test method or set of source test methods are specified for any testing. Paragraph (h)(11) defines a violation of Rule 1430 to occur if the results of any one of the specified source test methods or set of source test methods demonstrate an exceedance of an emission standard.

Paragraph (h)(~~12~~13) requires testing to be performed according to the most recent SCAQMD-approved test protocol for the same purpose or compounds regardless of whether the testing is conducted by the facility, by SCAQMD, or by a contractor acting on behalf of SCAQMD or the facility to determine compliance.

Paragraph (h)(~~13~~14) requires source test reports to be submitted to SCAQMD in 60 days or less after source testing has been completed.

Paragraph (h)(~~14~~15) allows for an extension of the compliance deadline date for conducting source tests as specified in paragraph (h)(1) provided that the facility can demonstrate that a complete source test protocol and associated information was provided according to the required timeline, and is unable to meet the deadline due to reasons beyond the facility's control. Paragraph (h)(~~14~~15) also requires a request for extension to be submitted to the Executive Officer for approval no later than 30 days before the compliance deadline date.

Monitoring – subdivision (i)

Paragraph (i)(1) requires the installation, operation, calibration and maintenance of a BLDS pursuant to SCAQMD Rule 1155 – Particulate Matter (PM) Control Devices.

Paragraph (i)(2) requires the minimum hood induced capture velocity to be measured by static pressure once per operating shift using the measurement procedures specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Operation and Maintenance,* published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with SCAQMD, or any more stringent methods required by OSHA or CAL-OSHA.

Paragraph (i)(3) requires continuous monitoring of the pressure drop across the HEPA filter of an emission control device with a mechanical gauge positioned so that it is easily visible and in clear sight of the operator or maintenance personnel. Paragraph (i)(3) also establishes requirements for the continuous monitoring device. Paragraph (i)(~~3~~4) ~~also~~ requires the pressure drop across the HEPA filter to be maintained within -1/2 times to +2 times the inches of water of the value established during the performance test to demonstrate compliance with the emission limitation for the emission control device based on hourly recordings by the continuous monitoring device for the averaging periods specified in subparagraphs (i)(5)(A) and (i)(5)(B).

Paragraph (i)(~~4~~5) requires confirmation of the capture velocity and a periodic smoke test to be conducted at least once every three months using the procedure set forth in Appendix 1 of Rule 1430 for each emission collection system, unless performing such test presents an unreasonable risk to safety.

Recordkeeping – subdivision (j)

Paragraph (j)(1) requires the following monthly records to be kept indicating: ~~1) the weight of metal processed by the facility; 2~~1) the weight of metal waste collected by the baghouse catch, including, if applicable any metal analyses for bulk samples of baghouse catches conducted for XRF analyses; and, ~~3~~2) the weight of metal waste collected by housekeeping activities. Paragraph (j)(1) also requires the following records to be kept indicating: 1) the dates when bags for baghouses, cartridges, or HEPA filters are replaced; 2) periodic smoke tests; 3) emission control device inspection and maintenance; 4) housekeeping activities; 5) maintenance and repair activities including the name of the person performing the activity, and the dates and times at which specific activities were completed; and, 6) a log of reports to the facility regarding odors or

other air quality related issues that includes the date, time, name and contact information for the person reporting the issue, source of the issue, ~~and~~ how the issue was resolved, and how it would be avoided in the future.

Paragraph (j)(2) requires records to be kept for BLDS ~~pursuant to SCAQMD Rule 1155~~.

Paragraph (j)(3) requires all records to be maintained for five years, ~~with at least the two most recent years kept onsite~~ and shall be made available to SCAQMD personnel upon request with at least the two most recent years kept onsite.

Signage – subdivision (k)

Paragraph (k)(1) requires the installation of a sign, measuring 16 square feet with lettering at least three inches tall with text contrasting with the sign background, within 50 feet of each entrance of the facility that is visible to the public, and in a location on each side of the facility that is visible to the public, that states the following: "TO REPORT AIR QUALITY ISSUES SUCH AS ODORS, DUST OR SMOKE FROM THIS FACILITY, CALL EITHER ~~[*FACILITY CONTACT PHONE NUMBER*] OR~~ THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG."

Permit Application Submittals for Existing Metal Grinding or Cutting Operations – subdivision (l)

Subdivision (l) requires permit applications to be submitted no later than 60 days after rule adoption for all construction and/or necessary equipment required by paragraphs (d)(8) – Total Enclosures with Negative Air and (e)(1) – Emission Control Devices, for existing metal grinding or metal cutting operations, and Bag Leak Detection Systems.

Odor Contingency Measures (m)

Paragraph (m)(1) requires the owner or operator of a metal forging facility that has been notified by the Executive Officer of four (4) confirmed odor complaints in any consecutive six (6) months to implement an odor reducing measure(s) from the list specified in subparagraphs (m)(1)(A) through (m)(1)(D) of the proposed rule. Odor reducing measures include: 1) operational changes, 2) process changes, 3) enhancements to enclosures, and 4) other types of modifications approved by the Executive Officer.

Paragraph (m)(2) requires odor reducing measures to be implemented within a specific time period from the date the owner or operator is notified by the Executive Officer of four (4) confirmed odor complaints. The time period implement odor reducing measures are as follows: 60-days for measures related to operational or process changes, 90 days for measures related to enhancements to enclosures and on a schedule approved by the Executive Officer for measures that require Executive Officer approval. Paragraph (d)(3) requires the owner or operator to notify the Executive Officer within 30 days after implementing a measure required under paragraph (m)(1).

Paragraph (m)(4) requires that the consecutive 6-month period referenced in paragraph (m)(1) is restarted upon implementation of an odor reducing measure selected to comply with subparagraphs (m)(1)(A) through (m)(1)(D).

Rule 219 Exemption – subdivision (~~m~~n)

Subdivision (~~m~~n) clarifies that as of the date of rule adoption, any equipment subject to the requirements of Rule 1430 for metal grinding or metal cutting operations and associated emission

control devices will no longer be exempt from the requirement of a written permit pursuant to SCAQMD Rule 219 – Equipment Not Requiring A Written Permit Pursuant to Regulation II.

Appendix 1 - Smoke Test to Demonstrate Capture Efficiency for Ventilation Systems of (an) Emission Control Device(s) Pursuant to Paragraph (i)(4)

Appendix 1 contains procedures for conducting a smoke test of point sources where an emission control device is used to capture and control emissions from metal grinding or metal cutting operations.

CHAPTER 2

ENVIRONMENTAL CHECKLIST

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's potential adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	~~Draft~~ Final Environmental Assessment for Proposed Rule (PR) 1430 – Control of Emissions From Metal Grinding Operations at Metal Forging Facilities
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Mr. Sam Wang (909) 396-2649
PR 1430 Contact Person	Mr. Eugene Kang (909) 396-3524
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	SCAQMD staff is proposing a new rule, Rule 1430 to reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities located in industrial, commercial, or mixed land use areas throughout the entire SCAQMD jurisdiction. PR 1430 does not apply to grinding or cutting operations that are conducted under a continuous flood of metal removal fluid. PR 1430 would require owners or operators of the affected facilities to: 1) construct total enclosures; 2) modify existing or install new air pollution control devices; 3) install a BLDS (as applicable); 4) implement housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming; 5) conduct source testing and monitoring to assure compliance; and, 6) conduct recordkeeping. Some facilities that may be affected by PR 1430 are identified on lists compiled by the California Department of Toxic Substances Control per California Government Code §65962.5. While the reduction of toxic emissions, PM emissions, and odors will be expected to create an environmental benefit, activities that facility operators may undertake to comply with PR 1430 may also create secondary adverse environmental impacts from the construction and operation activities primarily associated with building total enclosures and with installing new or

	modifying existing air pollution control equipment. However, analysis of the proposed project in the ~~Draft~~Final EA did not result in the identification of any environmental topic areas that would be significantly adversely affected by the proposed project.
Surrounding Land Uses and Setting:	Residential, Commercial, Industrial and Mixed Use
Other Public Agencies Whose Approval is Required:	Not applicable

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓"involve at least one impact that is a "Potentially Significant Impact". An explanation relative to the determination of impacts can be found following the checklist for each area.

☐ Aesthetics	☐ Geology and Soils	☐ Population and Housing
☐ Agriculture and Forestry Resources	☐ Hazards and Hazardous Materials	☐ Public Services
☐ Air Quality and Greenhouse Gas Emissions	☐ Hydrology and Water Quality	☐ Recreation
☐ Biological Resources	☐ Land Use and Planning	☐ Solid and Hazardous Waste
☐ Cultural Resources	☐ Mineral Resources	☐ Transportation and Traffic
☐ Energy	☐ Noise	☐ Mandatory Findings of Significance

DETERMINATION

On the basis of this initial evaluation:

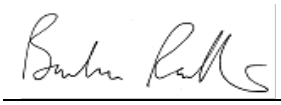
☑ I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline §15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts has been prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.

☐ I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.

☐ I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect: 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards; and, 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects: 1) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards; and, 2) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: January 10, 2017 **Signature:** 

Barbara Radlein
Program Supervisor, CEQA Special Projects
Planning, Rules, and Area Sources

ENVIRONMENTAL CHECKLIST AND DISCUSSION

As discussed in Chapter 1, the main focus of PR 1430 is to reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities. PR 1430 has been evaluated relative to the environmental topics identified in the following environmental checklist (e.g., aesthetics, agricultural and forestry resources, biological resources, etc.). Several requirements in PR 1430 would not be expected to cause any physical changes that that could have secondary adverse environmental effects. For example, activities such as conducting monitoring of the emission collection system, record keeping, posting signage and applying for permit applications, and filing source test protocols are administrative or procedural in nature and would not be expected to create any secondary adverse environmental effects. However, there are activities that facility operators may undertake to comply with PR 1430 and these activities may also create secondary adverse environmental impacts. For example, PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, and the installation of a BLDS (as applicable). In addition, operational activities such as conducting source testing, and implementing housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming may also contribute to secondary adverse environmental impacts. Thus, the analysis in this EA focuses on the potential secondary adverse environmental impacts from these activities. To evaluate these impacts, the following assumptions were relied upon in the foregoing analyses:

Of the 22 metal forging facilities that will be subject to PR 1430:

- 5 are assumed to construct new buildings/enclosures and install new air pollution control equipment (11 baghouses with HEPA filters). While 2 of these facilities have existing air pollution control equipment, the analysis conservatively assumes that the existing air pollution control equipment will be demolished and replaced with new air pollution control equipment (4 baghouses without HEPA filters).
- ~~2~~ 3 facilities are assumed to construct one wall (in order to attain a complete enclosure) and 2 facilities are expected to install new air pollution control equipment (2 baghouses without HEPA filters).
- ~~12~~ 9 facilities are assumed to ~~to~~ install new air pollution control equipment (12 baghouses with HEPA filters and ~~3~~ 1 baghouse~~s~~ without HEPA filters).
- All of the facilities are assumed to meet the requirement for total enclosures by one year after PR 1430 is adopted.
- 5 facilities are assumed to not need any additional air pollution control equipment or building construction to meet the total enclosure requirement but instead, would make minor improvements to their buildings.
- ~~7~~ 11 facilities are assumed to be operated under negative air conditions and ~~6~~ 10 of these facilities are assumed to need new or upgraded ventilation systems for air pollution control equipment, in order to properly ventilate the total enclosures and achieve negative air conditions.
- All of the air pollution control equipment installed or modified will require maintenance which will involve collection and recycling or disposal of collected PM, periodic bag replacement for baghouses, periodic HEPA filter replacement for systems equipped with HEPA filters and the associated delivery and haul trips.

- All of the air pollution control equipment installed or modified will require periodic source testing which will have associated worker trips to visit each facility to conduct the source tests.
- All of the housekeeping activities could require the use of some water to conduct periodic cleaning.

Subsequent to the release of the Draft EA for public review and comment, additional revisions were made to PR 1430 that are described in the Project Description section in Chapter 1. These revisions resulted in adjustments to the number of facilities and the types of modifications that may be made to the affected facilities as indicated in strikeout/underlined text above. Nonetheless, staff has reviewed these modifications and concluded that overall, no new impacts are anticipated to result from these modifications. Further, the impacts previously evaluated in the Draft EA would not be made substantially worse and the conclusions reached in the Draft EA remained unchanged in the Final EA with respect to the currently version of PR 1430. Thus, staff has concluded that none of the modifications constitute significant new information or a substantial increase in the severity of an environmental impact, nor provide new information of substantial importance relative to the Draft EA. In addition, revisions to PR 1430 in response to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5 and §15088.5.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
I.	**AESTHETICS.** Would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☑
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☑

Significance Criteria

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

I. a), b) & c) No Impact. To reduce toxic emissions and PM emissions from the affected facilities, older, less efficient air pollution control equipment may need to be replaced with newer, cleaner, more efficient air pollution control equipment or in some cases, new air pollution control equipment such as baghouses and/or HEPA filters will need to be installed. In addition, some facilities may need to build new enclosures or remodel existing enclosures.

Due to the large size profiles of the air pollution control equipment that may need to modified or installed and the enclosures that may need to be modified or built, construction will be needed to carry out these activities, which will require the use of heavy-duty construction equipment such as

cranes, tractor/loader/backhoes, and forklifts, et cetera. The use of cranes, in particular, because of their height when fully extended, may be visible to the surrounding areas and temporarily change the skyline of the affected facilities, depending on where they are located within each facility's property. Except for the use of cranes, the majority of the construction equipment is expected to be low in height and not substantially visible to the surrounding area due to existing fencing along the property lines and existing structures currently within the facilities that may buffer the views of the construction activities.

Because each affected facility is located in existing industrial, commercial or mixed land use areas, the construction equipment is not expected to be substantially discernable from what exists on-site for routine operations and maintenance activities. Further, the construction activities are not expected to adversely impact views and aesthetics resources since most of the heavy equipment and activities are expected to occur within the confines of each existing facility and are expected to introduce only minor visual changes to areas outside each facility, if at all, depending on the location of the construction activities within the facility.

Lastly, the construction activities are expected to be temporary in nature and will cease following completion of the installation of new or modifications to existing buildings and air pollution control equipment. Once construction of any new or modified buildings or air pollution control equipment is completed, all construction equipment will be removed from each facility. These new or modified air pollution control devices would be expected to blend in with the existing industrial profile at the affected facilities because the heights of these units are typically smaller when compared to neighboring existing equipment onsite and their associated stack heights would be about the same or shorter than existing stacks within the affected facilities.

PR 1430 also contains requirements for facility owners or operators to conduct periodic housekeeping and maintenance activities, such as wet cleaning, vacuuming, and make modifications to the air ventilation system so that the air pollution control equipment can operate under negative air pressure conditions. These low-profile activities are limited to each facility's property such that they are not expected to affect any scenic vistas. For facilities that are required to have a BLDS, the installation consists of placing probes within the baghouse system so these modifications are expected to blend in with the existing equipment. In addition, PR 1430 imposes limits on PM concentration levels and strengthens existing visible emission requirements. To that extent, toxic and PM emission reductions are achieved through PR 1430, and, thus, improvements in visibility would also be expected to occur once all of the metal grinding and metal cutting activities are relocated inside an enclosure. Better visibility will be expected to improve the existing visual character or quality of areas in the vicinity of affected sites.

Therefore, any potential construction and operation of new and modified existing equipment or buildings as a result of the proposed project would not be expected to damage, degrade, or obstruct scenic resources and the existing visual character of any site in the vicinity of affected facilities.

I. d). No Impact. There are no components in PR 1430 that would require construction activities to occur at night. Further, cities often have their own limitations and prohibitions that restrict construction from occurring during evening hours and weekends. Therefore, no additional temporary construction lighting at the facility would be expected. Similarly, while the proposed project has no provisions that would require affected equipment to operate at night, some facilities currently operate multiple shifts and existing lighting is utilized during the nighttime shifts. For those facilities that are projected to modify existing or construct new buildings or air pollution

control equipment, once construction is complete, additional permanent light fixtures may be installed on or near the new or modified structures for safety and security reasons. These permanent light fixtures would be positioned to direct light downward toward equipment within the facility so as to not create additional light or glare offsite to residences or sensitive receptors. Therefore, the proposed project is not expected to create a new source of substantial light or glare at any of the affected facilities in a manner that would adversely affect day or nighttime views in the surrounding areas.

Conclusion

Based upon these considerations, significant adverse aesthetics impacts are not expected from implementing PR 1430. Since no significant aesthetics impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
II.	**AGRICULTURE AND FORESTRY RESOURCES.** Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	☐	☐	☐	☑
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104 (g))?	☐	☐	☐	☑
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑

Significance Criteria

Project-related impacts on agriculture and forest resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code §12220 (g)), timberland (as defined in Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code § 51104 (g)).
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

II. a), b), c), & d) No Impact. The affected facilities and their immediately surrounding areas are not located on or near areas zoned for agricultural use, Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency. Therefore, the proposed project would not result in any construction of new buildings or other structures that would require converting farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract. Since both construction and operation activities that would occur as a result of implementing the proposed project would occur within the existing boundaries of each affected facility, there are no provisions in PR 1430 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements relative to agricultural resources would be altered by the proposed project.

All of the facilities are located in existing industrial, commercial or mixed land use areas in the urban portion of the Basin that is not near forest land. Therefore, the proposed project is not expected to conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104 (g)) or result in the loss of forest land or conversion of forest land to non-forest use.

Since PR 1430 would not require the installation or modification of buildings or equipment to occur near farmland, the proposed project is not expected to result in converting farmland to non-agricultural use; or conflict with existing zoning for agricultural use, or a Williamson Act contract. Similarly, it is not expected that PR 1430 would conflict with existing zoning for, or cause rezoning of, forest land; or result in the loss of forest land or conversion of forest land to non-forest use. Consequently, the proposed project would not create any significant adverse agriculture or forestry impacts.

Conclusion

Based upon these considerations, significant adverse agricultural and forest resources impacts are not expected from implementing PR 1430. Since no significant agriculture and forest resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
III. AIR QUALITY AND GREENHOUSE GAS EMISSIONS. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☑
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☐	☑	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☑	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☑	☐
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	☐	☐	☑	☐
g) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
h) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

Significance Criteria

To determine whether or not air quality and greenhouse gas impacts from implementing PR 1430 are significant, impacts will be evaluated and compared to the criteria in Table 2-1. PR 1430 will be considered to have significant adverse impacts if any one of the thresholds in Table 2-1 are equaled or exceeded.

Table 2-1
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds [a]		
Pollutant	**Construction** [b]	**Operation** [c]
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO_2eq for industrial facilities	
Ambient Air Quality Standards for Criteria Pollutants [d]		
NO_2 1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM_{10} 24-hour average annual average	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation) 1.0 μg/m^3	
$PM_{2.5}$ 24-hour average	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation)	
SO_2 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 μg/m^3 (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day Average Rolling 3-month average	1.5 μg/m^3 (state) 0.15 μg/m^3 (federal)	

[a] Source: SCAQMD CEQA Handbook (SCAQMD, 1993)
[b] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).
[c] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.
[d] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[e] Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day ppm = parts per million μg/m^3 = microgram per cubic meter ≥ = greater than or equal to
MT/yr CO_2eq = metric tons per year of CO_2 equivalents > = greater than

Revision: March 2015

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

III. a) No Impact. The SCAQMD is required by law to prepare a comprehensive district-wide Air Quality Management Plan (AQMP) which includes strategies (e.g., control measures) to reduce emission levels to achieve and maintain state and federal ambient air quality standards, and to ensure that new sources of emissions are planned and operated to be consistent with the SCAQMD's air quality goals. The AQMP's air pollution reduction strategies include control measures which target stationary, area, mobile and indirect sources. These control measures are based on feasible methods of attaining ambient air quality standards. Pursuant to the provisions of both the state and federal Clean Air Acts, the SCAQMD is also required to attain the state and federal ambient air quality standards for all criteria pollutants.

The 2012 AQMP was adopted by the SCAQMD Governing Board on December 7, 2012. In addition, on November 5, 2010, the Governing Board approved the 2010 Clean Communities Plan (CCP). The CCP is an update to the 2000 Air Toxics Control Plan (ATCP)[6] and its 2004 Addendum. The objective of the 2010 CCP is to reduce the exposure to air toxics and air-related nuisances throughout the district, with emphasis on cumulative impacts. The elements of the 2010 CCP are community exposure reduction, community participation, communication and outreach, agency coordination, monitoring and compliance, source-specific programs, and nuisance.

The most recent regional blueprint for how the SCAQMD will achieve air quality standards and healthful air is outlined the Draft Final 2016 AQMP[7] which contains multiple goals promoting reductions of criteria air pollutants, greenhouse gases, and toxics. At the time of this publication, the 2016 AQMP is scheduled for consideration by the SCAQMD Governing Board on February 3, 2017. In particular to toxics emissions, more information has become available about metal forging facilities with metal grinding and cutting operations indicating that more controls are needed to address fugitive toxic PM emissions, especially metal PM. Since heavy metals, such as nickel, cadmium, hexavalent chrome, cobalt and metal PM have high relative risks compared to other toxics and can create health problems from ingestion, dermal exposure, and through consumption of breast-milk, the Draft Final 2016 AQMP contains SCAQMD's air toxics control strategy TXM-01 - Control of Metal Particulate from Metal Grinding Operation, to specifically address reducing metal PM emissions from metal grinding activities at metal forging facilities, metal foundries, and plating operations.

PR 1430 was developed to partially implement TXM-01, by reducing toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities. Both metal grinding and metal cutting operations are currently exempt from SCAQMD permits,

[6] SCAQMD Air Toxics Control Plan, http://www.aqmd.gov/home/library/clean-air-plans/clean-communities-plan/air-toxics-control-plan.

[7] SCAQMD, Draft Final 2016 Air Quality Management Plan, http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/draft-final-aqmp/clean/2016finaldraftaqmpdec2016(clean).pdf.

and as such operations are currently an unregulated source category. Although some of the metal grinding and metal cutting operations have air pollution controls, most are not permitted. PR 1430 will ensure that metal particulate emissions are appropriately vented to air pollution control equipment, fugitive emissions are contained within a building enclosure, and housekeeping measures are implemented to further minimize emissions from metal grinding and metal cutting operations at metal forging facilities. Upon implementation, PR 1430 would be expected to reduce health risks and minimize public nuisance and odors affecting neighboring businesses and residents.

For these reasons, PR 1430 would not obstruct or conflict with the implementation of the 2012 AQMP or the Draft Final 2016 AQMP because the emission reductions from implementing PR 1430 are in addition to emission reductions in the 2012 AQMP and are in accordance with the emission reduction goals in the Draft Final 2016 AQMP. Additionally, PR 1430 does not include any provisions which would conflict with the attainment of ozone and PM standards in either the 2012 AQMP or the Draft Final 2016 AQMP.

PR 1430 would reduce toxic and PM emissions and therefore, be consistent with the goals of the 2012 AQMP, the 2010 CCP, and the Draft Final 2016 AQMP. Therefore, implementing PR 1430 to reduce toxic and PM emissions from metal grinding and metal cutting operations at metal forging facilities would not conflict with or obstruct implementation of the applicable air quality plans. Since no significant impacts were identified for this issue, no mitigation measures are necessary or required.

III. b) and f) Less Than Significant Impact. For a discussion of these items, refer to the following analysis.

New Facilities

SCAQMD staff is not aware of any new metal forging facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if any, would be built in the long-term. Therefore, in accordance with CEQA Guidelines §15145, an evaluation of construction and operation impacts for new facilities is concluded to be speculative and will not be evaluated further in this analysis. The focus of the analysis will be on the 22 existing facilities as explained in the following discussion.

Existing Facilities

The primary source of air quality construction impacts would be from PR 1430's key requirements to construct total enclosures, remove existing air pollution control devices (as applicable) and install new air pollution control devices and associated ventilation systems as needed, and install BLDS (as applicable). Similarly, the primary source of air quality impacts during operation would be from the requirements to conduct source testing and implement housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming. Thus, the analysis focuses on the potential secondary adverse environmental impacts from these activities during construction and operation.

Table 2-2 summarizes the key requirements in PR 1430 that may create secondary adverse air quality and GHG impacts during construction and operation.

Table 2-2
Sources of Potential Secondary Adverse Air Quality and GHG Impacts During Construction and Operation

Key Requirements in PR 1430	Physical Actions Anticipated During:	
	Construction	**Operation**
Total Enclosures	1. Install total enclosure and make building improvements 2. Install ventilation system to achieve negative air conditions	1. New total enclosure building operation 2. Ventilation system operation using blowers to achieve negative air conditions
Point Source Emission Controls	Air pollution control equipment replacement and/or installation	1. Air pollution control equipment operation 2. Vehicle trips due to filter replacement and waste disposal 3. Collection and recycling or disposal of collected PM 4. Leak detection
Housekeeping Requirements	None needed	1. Vehicle trips due to hauling waste and delivering supplies 2. Cleaning equipment
Source Testing	None needed	Vehicle trips due to periodic source testing

For the purpose of the conducting a worst-case CEQA analysis, for the 22 metal forging facilities that will be subject to PR 1430, the following assumptions[8] have been made:

- 5 facilities are assumed to construct new buildings/enclosures and install new air pollution control equipment (11 baghouses with HEPA filters). While 2 of these facilities have existing air pollution control equipment, the analysis conservatively assumes that the existing air pollution control equipment will be demolished and replaced with new air pollution control equipment (4 baghouses without HEPA filters).
- ~~2~~ 3 facilities are assumed to construct one wall (in order to attain a complete enclosure) and 2 facilities are expected to install new air pollution control equipment (2 baghouses without HEPA filters).
- ~~12~~ 9 facilities are assumed to install new air pollution control equipment (12 baghouses with HEPA filters and ~~3~~ 1 baghouses without HEPA filters).
- All of the facilities are assumed to meet the requirement for total enclosures by one year after PR 1430 is adopted.

[8] SCAQMD staff evaluated the 22 affected facilities and compiled information and data specific to the air pollution control equipment, total enclosures, ventilations systems to create negative air conditions, and the new buildings. This information and data were used to develop the assumptions applied in this CEQA analysis.

- 5 facilities are assumed to not need any additional air pollution control equipment or building construction to meet the total enclosure requirement but instead, would make minor improvements to their buildings.
- ~~7~~ 11 facilities are assumed to be operated under negative air conditions and ~~6~~ 10 of these facilities are assumed to need new or upgraded ventilation systems for their air pollution control equipment, in order to properly ventilate the total enclosures and achieve negative air conditions.
- All of the air pollution control equipment installed or modified will require maintenance which will involve collection and recycling or disposal of collected PM, periodic bag replacement for baghouses, periodic HEPA filter replacement for systems equipped with HEPA filters and the associated delivery and haul trips.
- All of the air pollution control equipment installed or modified will require periodic source testing which will have associated worker trips to visit each facility to conduct the source tests.
- All of the housekeeping activities could require the use of some water to conduct periodic cleaning.

Construction Impacts

Construction emissions were estimated according to the following construction phases: demolition of an existing building, air pollution control equipment, and its foundation; site grading; and, construction of a new building or improve an existing building to meet the total enclosure requirement, installation of the air pollution control equipment, and pouring the foundation[9]. In addition, criteria pollutant emissions were also calculated for all on-road vehicles transporting workers, vendors, and material removal and delivery during construction using the California Emissions Estimator Model[10]® version 2016.3.1 (CalEEMod). The detailed output reports for the CalEEMod runs are included in Appendix B of this EA. Table 2-3 presents the results of the construction air quality analysis. Appendix B also contains the spreadsheets with the results and assumptions used for this analysis.

The construction impact analysis assumes that construction will take from one month up to five months to complete at each affected facility, with the time depending on the numbers of the air pollution control equipment to be constructed and whether the facility needs to demolish the existing building and construct a new building with total enclosure. However, the actual construction time could be substantially less than one month for some facilities. The peak daily emissions vary for each pollutant depending on the construction phase. Further, given the duration of the construction for each facility and the twelve month timeframe for all the affected facilities to comply with the requirements in PR 1430, it was conservatively assumed that the construction phases for some facilities would overlap which resulted in construction occurring at as many as 5 facilities on a peak day.

[9] In general, no or limited construction emissions from grading are anticipated because modifications or installation of new equipment would occur at existing industrial/commercial facilities and, therefore, would not be expected to require digging, earthmoving, grading, etc.

[10] CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects.

Table 2-3 summarizes the peak daily emissions associated with construction at all affected facilities. Therefore, the air quality impacts due to construction from implementation of PR 1430 are expected to be less than significant.

Table 2-3
Peak Daily Construction Emissions

ACTIVITY\POLLUTANT	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Scenario 1 - New Building Construction						
A. Demolition of Building	1.42	12.16	8.75	0.02	1.46	0.89
B. Demolition of Baghouse	1.40	11.60	8.64	0.01	1.37	0.88
C. Demolition of Baghouse Foundation	1.40	11.60	8.64	0.01	1.33	0.87
D. Grading	1.58	20.69	10.43	0.04	2.20	1.34
E. Building Construction	1.30	12.96	8.22	0.01	0.89	0.80
F. Building Paving	1.18	10.33	8.33	0.01	0.83	0.62
G. Baghouse Pad Paving	1.20	10.87	8.73	0.01	0.90	0.67
H. Baghouse Installation	1.97	16.30	9.95	0.02	0.97	0.90
Scenario 2 - New Baghouse/HEPA Installation						
E. Building Construction	0.79	6.98	3.29	0.01	0.39	0.34
B. Demolition of Baghouse	1.40	11.45	8.61	0.01	1.13	0.84
C. Demolition of Baghouse Foundation	1.40	11.45	8.61	0.01	1.13	0.84
G. Baghouse Pad Paving	0.66	5.92	4.47	0.01	0.48	0.37
H. Baghouse Installation	1.09	8.81	5.13	0.01	0.54	0.50
Scenario 3 - Building Improvement For Total Enclosure						
E. Building Construction	0.79	6.98	3.29	0.01	0.39	0.34
Daily Peak Construction Emissions	6	64	40	0.08	5.6	4.1
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55
SIGNIFICANT?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Notes and assumptions:

a. All of the construction activities are expected to be completed 1 year after PR 1430 is adopted except for the construction activities required in the provision of the odor contingency measures which will not occur until 1 year after PR 1430 is adopted.

b. It is expected that five, 12, and five facilities will implement Scenario 1, 2 and 3, respectively. In Scenario 1 and 2, each facility will not have any construction sub-phases (from A to H) overlapping.

c. For all pollutants except VOC, the maximum emissions occur when five facilities with construction activities overlap [three under Scenario 1 (1D and two 1E) and two under Scenario 2 (2B and 2G)]. For VOC, the maximum emissions occur when five facilities with construction activities overlap [three under Scenario 1 (three 1E) and two under Scenario 2 (2C and 2H)].

d. Appendix B contains the detailed calculations.

Operational Impacts

As explained previously, secondary air quality operational impacts are expected to occur from the following activities: maintenance of the air pollution control equipment; source testing; and, housekeeping. Total operational emissions were estimated using CARB's OFFROAD2011for the off-road equipment (aerial lift) and EMFAC2014 for the mobile sources (for example, waste disposal trucks, source testing trucks, filter replacement trucks, and etc.). Currently, the affected facilities periodically send their collected PM, which is considered as hazardous waste, to the certified landfill or recycling facility for proper disposal or recycling. After PR 1430 is implemented, while additional PM is expected to be collected by the air pollution control equipment, the affected facilities are expected to continue their existing practices for handling their waste. PR 1430 would also require roof cleaning and source testing of the applicable air pollution control equipment for each affected facility. Roof cleaning is assumed to be performed with the assistance of aerial lifts. Source testing is assumed to require additional vehicle trips to the facility on the day of source testing. As a reasonable worst case analysis, it is assumed that each facility will utilize the following vehicles and off-road equipment each year: 1 waste/wastewater disposal truck, 1 source testing truck, 1 filter replacement truck, 1 filter inspection truck, and 1 aerial lift. Although it is unlikely, it is assumed that of the 22 facilities, 11 facilities would conduct maintenance of the air pollution control equipment, perform roof cleaning, and conduct source testing on the same day, such that 44 trucks and 11 aerial lifts would be operating on a peak day. In addition, a round trip distance of 40 miles was assumed for every on-road vehicle used during operation. The air quality impacts during operation are summarized in Table 2-4. Appendix B contains the detailed spreadsheets with the assumptions used for this analysis.

As indicated in Table 2-4, operational emissions anticipated from implementing PR 1430 do not exceed any significance threshold. Therefore, the operational air quality impact is considered less than significant. The proposed project is not expected to result in significant adverse operational criteria pollutant emission impacts.

Table 2-4
Peak Daily Operational Emissions

Key Requirements: Operation Phase [a]	**VOC, lb/day**	**NO_x, lb/day**	**CO, lb/day**	**SO_x, lb/day**	**PM_{10}, lb/day**	**$PM_{2.5}$, lb/day**
Point Source Emission Controls	1.41	1.21	0.70	0.30	0.22	0.01
Housekeeping [b]	9.47	15.92	1.44	1.11	2.97	0.02
Source Testing	1.14	1.13	0.34	0.20	0.20	0.00
Total Operational Emissions	12.02	18.26	2.49	1.61	3.39	0.03
SIGNIFICANCE THRESHOLD DURING OPERATION	55	55	550	150	150	55
SIGNIFICANT?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:
[a.] The occasional delivery, recycling and disposal of PM or filters and the source testing trips are expected to generate mobile source emissions.
[b.] Housekeeping emissions are generated from the equipment used for conducting roof cleaning at the 11 overlapping facilities.
[c.] See Appendix B for detailed calculations.

Construction and Operation Overlap Impact

Given the number of affected facilities and the varying requirements for the facility's to comply with PR 1430 requirements, there is a possibility that there will be ~~an~~ overlaps between construction emissions at some facilities and operational emissions at other facilities. Based on PR 1430 requirements, the~~is~~ overlap will occur either at the time between month six and month 12 following PR 1430 adoption or ~~,~~ until one year after PR 1430 is adopted when there is a facility which triggers the odor contingency measures. The minor building enclosure enhancement is required to be implemented at the facility when the odor contingency measures are triggered. However, the emissions associated with these building enclosure enhancement activities are consider minimal and therefore will not exceed the maximum emissions previously estimated due to the overlap in construction and operation. The maximum emissions from the overlap period are expected to occur between month six and month twelve following PR 1430 adoption.

During this overlap period between month six and month twelve following PR 1430 adoption, only a limited number of operational vehicles and equipment will be needed at those facilities that have recently completed construction and installed the new baghouse systems and/or constructed the new total enclosure buildings because the compliance schedule for conducting roof top cleaning, baghouse replacement, or waste/wastewater disposal will not have been triggered. Therefore, during this overlap period, it was assumed that 8 source test, delivery, and disposal trucks and 2 aerial lifts will be used for operations on a peak day at two facilities, in addition to the construction emissions at four facilities, as presented in the Table 2-5. According to SCAQMD policy, the peak daily emissions from the construction and operation overlap period are estimated and compared to the SCAQMD's CEQA significance thresholds for operation in Table 2-5. The results show the impact from construction and operation overlap period is less than significant.

Table 2-5
Peak Daily Emissions in Construction and Operation Overlap Phase

Construction and Operation Overlap Phase	VOC, lb/day	NO_x, lb/day	CO, lb/day	SO_x, lb/day	PM_{10}, lb/day	$PM_{2.5}$, lb/day
Construction Emissions[a]	30.10 ~~2.19~~	48.08 ~~3.32~~	4.47 ~~0.45~~	3.06 ~~0.29~~	5.46 ~~0.62~~	0.07 ~~0.01~~
Operational Emissions[b]	2.19 ~~30.10~~	3.32 ~~48.08~~	0.45 ~~4.47~~	0.29 ~~3.06~~	0.62 ~~5.46~~	0.01 ~~0.07~~
Total Emissions	32.29	51.40	4.92	3.35	6.08	0.07
SIGNIFICANCE THRESHOLD DURING OPERATION	55	55	550	150	150	55
SIGNIFICANT?	**No**	**No**	**No**	**No**	**No**	**No**

Notes and assumptions:

a. The maximum construction impacts during the overlap phase occur when one facility is undergoing building construction and three facilities are performing baghouse construction/installation.

b. The maximum operational impact during the overlap phase occur when two facilities have operational emissions (up to 8 source test, delivery, and disposal trucks and 2 aerial lifts used on a peak day).

As indicated in Table 2-4, the emissions during the construction and operational overlap period anticipated from implementing PR 1430 do not exceed the SCAQMD's CEQA air quality significance thresholds. Therefore, the air quality impacts from construction and operation are considered less than significant. The proposed project is not expected to result in significant adverse air quality impacts during the construction and operation overlap period.

Indirect Criteria Pollutant Emissions from Electricity Consumption

Indirect criteria pollutant and GHG emissions are expected from the generation of electricity to operate new air pollution control equipment and ventilation system needed to create negative air conditions that occurs off-site at electricity generating facilities (EGFs). Emissions from electricity generating facilities are already evaluated in the CEQA documents for EGF projects when they are built or modified. The analysis in Section VI. - Energy b), c) and d) demonstrates that there is sufficient capacity from power providers for the increased electricity consumption needed to implement PR 1430.

Under the SCAQMD's RECLAIM program, EGFs were provided annual allocations of NO_x and SO_x emissions that typically decline annually. However, PR 1430 will cause an increase in energy use and a corresponding increase in emissions from the EGFs providing additional electricity (see Section VI. - Energy for the analysis of the energy impacts). Any potential NO_x and SO_x emission increases at the EGFs would need to be offset under the RECLAIM program in accordance with SCAQMD Regulation XX and increases in other pollutants would need to be offset under the New Source Review program in accordance with SCAQMD Regulation XIII – New Source Review. Thus, air quality impacts from electricity consumption are anticipated to be to less than significant.

III. c) Less Than Significant Impact.

Cumulatively Considerable Impacts

Based on the foregoing analysis, since criteria pollutant project-specific air quality impacts from implementing PR 1430 would not be expected to exceed the air quality significance thresholds in Table 2-1, cumulative air quality impacts are also expected to be less than significant. SCAQMD cumulative significance thresholds are the same as project-specific significance thresholds. Therefore, potential adverse impacts from implementing PR 1430 would not be "cumulatively considerable" as defined by CEQA Guidelines §15064(h)(1) for air quality impacts. Per CEQA Guidelines §15064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

The SCAQMD guidance on addressing cumulative impacts for air quality is as follows: "As Lead Agency, the SCAQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR." "Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."[11]

This approach was upheld by the Court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that where it can be found that a project did not exceed the South Coast Air Quality Management District's established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines §15064.7, stating, "The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect." The court found that, "Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria…" "Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact." As in *Chula Vista*, here the SCAQMD has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established SCAQMD significance thresholds. See also *Rialto Citizens for Responsible Growth v. City of Rialto* **(**2012) 208 Cal. App. 4th 899. Here again the court upheld the SCAQMD's approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. Thus, it may be concluded that the proposed project will not contribute to a significant unavoidable cumulative air quality impact.

[11] SCAQMD Cumulative Impacts Working Group White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution, August 2003, Appendix D, Cumulative Impact Analysis Requirements Pursuant to CEQA, at D-3, http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf.

III. d) Less Than Significant Impact.

Toxic Air Contaminants During Construction

Diesel particulate matter (DPM) is considered a carcinogenic and chronic toxic air contaminant (TAC). Since the diesel equipment used during the construction of the new building or air pollution control equipment is expected to be a short-term project (i.e. no more than six months at any facility), a Health Risk Assessment (HRA) was not conducted, consistent with OEHHA Guidance (2015). If subsequent site-specific projects have additional details about TAC impacts, they will be evaluated under CEQA at that time. In addition, implementation of PR 1430 will reduce toxic impacts by controlling PM emissions (containing TACs).

Therefore, PR 1430 is not expected to generate significant adverse TAC impacts from construction.

Toxic Air Contaminants During Operation

Direct Health Risk Reductions from PR 1430
PR 1430 is expected to reduce overall TAC emissions from metal forging facilities by requiring total enclosures, air pollution control equipment and other requirements to assure compliance. Therefore, PR 1430 is expected to have the benefit of reducing adverse health risk impacts from these facilities to nearby sensitive receptors.

Secondary Health Risk Impacts from PR 1430
The operation of non-combustion air pollution control equipment, which may be needed to comply with PR 1430, will collect toxic PM but will not be expected to generate any TAC emissions since the types of air pollution control equipment are expected to be powered by electricity.

Based on the above discussion, PR 1430 is not expected be significant for exposing sensitive receptors to substantial concentrations.

III. e) Less Than Significant Impact.

Odor Impacts

As previously explained, this analysis assumes that new buildings and new or modified air pollution control equipment will be constructed at the affected facilities and these facilities already operate diesel equipment and trucks. With regard to odors, currently, for all diesel-fueled equipment and vehicles, the diesel fuel is required to have a low sulfur content (e.g., 15 ppm by weight or less) in accordance with SCAQMD Rule 431.2 – Sulfur Content of Liquid Fuels. Such fuel is expected to minimize odor. Because the operation of construction equipment will occur within the confines of existing affected facilities, sufficient dispersion of diesel emissions over distance generally occurs such that odors associated with diesel emissions may not be discernable to offsite receptors, depending on the location of the equipment and its distance relative to the nearest offsite receptor. Further, the diesel trucks that will be operated onsite as a part of construction activities will not be allowed to idle longer than five minutes per any one location in accordance with the CARB idling regulation, so odors from these vehicles would not be expected. Therefore, the addition of several pieces of construction equipment and haul trucks that will

operate intermittently, over a relatively short period of time, are not expected to generate diesel exhaust odor greater than what is already typically present at the affected facilities.

Operation of the new air pollution control equipment and blowers are also not expected to generate any new odors because these devices are electric and the process of collecting the metal PM in enclosed bags, containers and filters would mean that these odorous materials would be captured, such that the existing odor profiles at the affected facilities would be reduced. PR 1430 prohibits the outside metal grinding and requires all affected facilities to conduct all metal grinding and metal cutting operations inside total enclosures which will also reduce odors at these facilities. PR 1430 also includes a provision of odor contingency measures for any facility that has been notified by the Executive Officer of four confirmed odor complaints in any consecutive six months to implement odor reducing measures.

Thus, PR 1430 is not expected to create significant adverse objectionable odors during construction or operation. Since no significant impacts were identified for this issue, no mitigation measures for odors are necessary or required.

III. g) and h) Less Than Significant Impact.

Greenhouse Gas (GHG) Impacts

Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of GHG emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities, appears to be closely associated with global warming. State law defines GHG to include the following: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) (HSC §38505(g)). The most common GHG that results from human activity is CO_2, followed by CH_4 and N_2O.

Traditionally, GHGs and other global warming pollutants are perceived as solely global in their impacts and that increasing emissions anywhere in the world contributes to climate change anywhere in the world. A study conducted on the health impacts of CO_2 "domes" that form over urban areas cause increases in local temperatures and local criteria pollutants, which have adverse health effects[12].

The analysis of GHGs is a different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, the significance thresholds are based on daily emissions because attainment or non-attainment is primarily based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health (e.g., one-hour and eight-hour standards). Since the half-life of CO_2 is approximately 100 years, for example, the effects of GHGs occur over a longer term which

[12] Jacobsen, Mark Z. "Enhancement of Local Air Pollution by Urban CO_2 Domes," Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at: http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html.

means they affect the global climate over a relatively long time frame. As a result, the SCAQMD's current position is to evaluate the effects of GHGs over a longer timeframe than a single day (i.e., annual emissions). GHG emissions are typically considered to be cumulative impacts because they contribute to global climate effects. GHG emission impacts from implementing PR 1430 were calculated at the project-specific level during construction and operation. For example, installation and operation of air pollution control equipment has the potential to increase the use of fuel during construction and electricity during operation which will in turn increase CO_2 emissions.

The SCAQMD convened a "Greenhouse Gas CEQA Significance Threshold Working Group" to consider a variety of benchmarks and potential significance thresholds to evaluate GHG impacts. On December 5, 2008, the SCAQMD adopted an interim CEQA GHG Significance Threshold for projects where SCAQMD is the lead agency (SCAQMD 2008). This GHG interim threshold is set at 10,000 metric tons of CO_2 equivalent emissions (CO_2e) per year (MT/yr). Projects with incremental increases below this threshold will not be cumulatively considerable.

Table 2-6 summarizes the GHG analysis which shows that PR 1430 may result in the generation of 17 amortized[13] MT/yr of CO_2e emissions during construction and ~~23~~ 25 MT/yr of CO_2e emissions during operation from all the affected facilities for a total of ~~40~~ 42 MT/yr of CO_2e emissions, which is less than the SCAQMD significance threshold. The detailed calculations of project GHG emissions can be found in Appendix B.

Table 2-6
GHG Emissions From 22 Affected Facilities

Activity	CO_2e (MT/year[a])
Construction [b]	17
Operation	~~23~~25
Total Project Emissions	**~~40~~42**
SIGNIFICANCE THRESHOLD	**10,000**
SIGNIFICANT?	**NO**

[a.] 1 metric ton = 2,205 pounds
[b.] GHGs from short-term construction activities are amortized over 30 years

Thus, as shown in Table 2-6, the SCAQMD's GHG significance threshold for industrial sources will not be exceeded. For this reason, implementing the proposed project is not expected to generate significant adverse cumulative GHG air quality impacts. Further, PR 1430 is not expected to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG gases.

[13] GHGs from short-term construction activities are amortized over 30 years. To amortize GHGs from temporary construction activities over a 30-year period (*est. life of the project/ equipment*), the amount of CO_2e emissions during construction are calculated and then divided by 30.

Conclusion
Based upon these considerations, significant air quality and GHG emissions impacts are not expected from implementing PR 1430. Since no significant air quality and GHG emissions impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IV.	**BIOLOGICAL RESOURCES.** Would the project:				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
c)	Have a substantial adverse effect on federally protected wetlands as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☑
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f)	Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

Significance Criteria

Impacts on biological resources will be considered significant if any of the following criteria apply:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

IV. a), b), c), & d) No Impact. The sites of the affected facilities that would be subject to PR 1430 currently do not support riparian habitat, federally protected wetlands, or migratory corridors because they are existing developed and established facilities currently used for industrial purposes. Additionally, special status plants, animals, or natural communities identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service are not expected to be found on or in close proximity to the affected facilities. Therefore, PR 1430 would have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely in the District.

Compliance with PR 1430 is expected to reduce emissions from metal grinding and metal cutting operations at the affected facilities, which would be expected to improve, not worsen, present conditions of plant and animal life, since previously uncontrolled toxic and metal PM emissions would be captured and disposed of properly before they could have the potential to impact plant and animal life. PR 1430 does not require acquisition of additional land or further conversions of

riparian habitats or sensitive natural communities where endangered or sensitive species may be found. Finally, the air pollution control equipment contemplated as part of implementing PR 1430 would be installed at the existing facilities and would not be built on or near a wetland or in the path of migratory species.

IV. e) & f) No Impact. The proposed project is not envisioned to conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans. Land use and other planning considerations are determined by local governments and no land use or planning requirements would be altered by implementing PR 1430. Additionally, PR 1430 would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan, and would not create divisions in any existing communities because all activities associated with complying with PR 1430 would occur at existing facilities in previously disturbed areas which are not typically subject to Habitat or Natural Community Conservation Plans.

The SCAQMD, as the Lead Agency, has found that, when considering the record as a whole, there is no evidence that implementing of PR 1430 would have potential for any new adverse effects on wildlife resources or the habitat upon which wildlife depends. Accordingly, based upon the preceding information, the SCAQMD has, on the basis of substantial evidence, rebutted the presumption of adverse effect contained in Title 14 of the California Code of Regulations §753.5 (d) - Projects Eligible for a No Effect Determination.

Conclusion

Based upon these considerations, significant biological resource impacts are not expected from implementing PR 1430. Since no significant biological resource impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
V.	**CULTURAL RESOURCES.** Would the project:				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☑
b)	Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☐	☐	☑
c)	Directly or indirectly destroy a unique paleontological resource, site, or feature?	☐	☐	☐	☑
d)	Disturb any human remains, including those interred outside formal cemeteries?	☐	☐	☐	☑

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code §21074?	☐	☐	☐	☑

Significance Criteria

Impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance, or tribal cultural significance to a community or ethnic or social group or a California Native American tribe.
- Unique paleontological resources or objects with cultural value to a California Native American tribe are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

V. a) No Impact. There are existing laws in place that are designed to protect and mitigate potential impacts to cultural resources. For example, CEQA Guidelines state that generally, a resource shall be considered "historically significant" if the resource meets the criteria for listing in the California Register of Historical Resources, which include the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values;
- Has yielded or may be likely to yield information important in prehistory or history (CEQA Guidelines §15064.5).

Buildings, structures, and other potential culturally significant resources that are less than 50 years old are generally excluded from listing in the National Register of Historic Places, unless they are shown to be exceptionally important. For any of the buildings or structures that may be affected by PR 1430 that are older than 50 years, they are buildings that are currently utilized for industrial purposes and would generally not be considered historically significant since they would not have

any of the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values. Therefore, PR 1430 is not expected to cause any impacts to significant historic cultural resources.

V. b), c), & d) No Impact. The installation of new or the modification of existing buildings or air pollution control equipment to comply with PR 1430 may require disturbance of previously disturbed areas at the affected existing industrial facilities. However, since construction-related activities are expected to be confined within the existing footprint of the affected facilities that have been fully developed and paved, PR 1430 is not expected to require physical changes to the environment which may disturb paleontological or archaeological resources. Furthermore, it is envisioned that these areas are already either devoid of significant cultural resources or whose cultural resources have been previously disturbed. Therefore, PR 1430 has no potential to cause a substantial adverse change to a historical or archaeological resource, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside formal cemeteries. Implementing of PR 1430 is, therefore, not anticipated to result in any activities or promote any programs that could have a significant adverse impact on cultural resources in the District.

V. e) No Impact. PR 1430 is not expected to require physical changes to a site, feature, place, cultural landscape, sacred place or object with cultural value to a California Native American Tribe. Furthermore, PR 1430 is not expected to result in a physical change to a resource determined to be eligible for inclusion or listed in the California Register of Historical Resources or included in a local register of historical resources. For these reasons, PR 1430 is not expected to cause any substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code §21074.

As part of releasing this CEQA document for public review and comment, the SCAQMD also provided a formal notice of the proposed project to all California Native American Tribes (Tribes) that requested to be on the Native American Heritage Commission's (NAHC) notification list per Public Resources Code §21080.3.1(b)(1). The NAHC notification list provides a 30-day period during which a Tribe may respond to the formal notice, in writing, requesting consultation on the proposed project.

In the event that a Tribe submits a written request for consultation during this 30-day period, the SCAQMD will initiate a consultation with the Tribe within 30 days of receiving the request in accordance with Public Resources Code §21080.3.1(b). Consultation ends when either: 1) both parties agree to measures to avoid or mitigate a significant effect on a Tribal Cultural Resource and agreed upon mitigation measures shall be recommended for inclusion in the environmental document [see Public Resources Code §21082.3(a)]; or, 2) either party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached [see Public Resources Code §21080.3.2(b)(1)-(2) and §21080.3.1(b)(1)].

Conclusion

Based upon these considerations, significant adverse cultural resources impacts are not expected from implementing PR 1430. Since no significant cultural resources impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VI.	**ENERGY.** Would the project:				
a)	Conflict with adopted energy conservation plans?	☐	☐	☐	☑
b)	Result in the need for new or substantially altered power or natural gas utility systems?	☐	☐	☑	☐
c)	Create any significant effects on local or regional energy supplies and on requirements for additional energy?	☐	☐	☑	☐
d)	Create any significant effects on peak and base period demands for electricity and other forms of energy?	☐	☐	☑	☐
e)	Comply with existing energy standards?	☐	☐	☐	☑

Significance Criteria

Impacts to energy resources will be considered significant if any of the following criteria are met:

- The project conflicts with adopted energy conservation plans or standards.
- The project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The project uses non-renewable resources in a wasteful and/or inefficient manner.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

VI. a) & e) No Impact. PR 1430 is not expected to conflict with any adopted energy conservation plans or violate any energy conservation standards because existing facilities would be expected to continue implementing any existing energy conservation plans that are currently in place regardless of whether PR 1430 is implemented.

PR 1430 is not expected to cause new development because it does not require new metal forging facilities to be built. While PR 1430 will primarily apply to existing facilities, it will also apply to

any new facilities that may be built in the future. However, SCAQMD staff is not aware of any new metal forging facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if any, would be built in the long-term. Any energy resources that may be necessary to install total enclosures, air pollution control equipment, conduct source tests, conduct monitoring and employ housekeeping would be used to achieve reductions in toxics, PM and odors from metal grinding and metal cutting operations at metal forging facilities, and therefore, would not be using non-renewable resources in a wasteful manner. The air quality benefits that would be expected to occur as a result of implementing these activities would not require utilities that would provide additional electricity and natural gas to the affected facilities to substantially alter power or natural gas system because any additional energy needed to implement PR 1430 can be provided from existing supplies. For these reasons, PR 1430 would not be expected to conflict with energy conservation plans or existing energy standards, or use non-renewable resources in a wasteful manner.

VI. b), c) & d) Less Than Significant Impact. PR 1430 will increase the use of electricity from the operation of air pollution control equipment, including the ventilation systems needed to create negative air conditions in the total enclosures. Diesel fuel would be consumed by construction equipment, maintenance equipment, and on-road vehicles during housekeeping, delivery, and hauling trips. No natural gas will be needed during construction. The following sections evaluate the various forms of energy sources that may be affected by the implementation of PR 1430.

Construction-Related Impacts

During the various phases of construction, diesel and gasoline fuel will be consumed by portable construction equipment (e.g., welders, cranes, pavers, mixers, generators, forklifts, etc.) needed to install air pollution control equipment, total enclosures, and monitoring equipment and by construction workers' vehicles and delivery/haul trucks traveling to and from each construction site. To estimate "worst-case" energy impacts associated with construction activities, the SCAQMD staff took the total construction SO_x emissions to scale to the total diesel fuel usage since the estimated SO_x emissions during construction are derived from CARB's OFFROAD2011 and EMFAC2014 models. These two models both calculate the SO_x emissions based on the mass-balanced method and the sulfur content in the fuel. Therefore, the total diesel fuel consumption from construction associated equipment and trucks can be estimated by scaling the SO_x emissions from one single piece of construction equipment with known diesel fuel usage in gallons per day to the total construction SO_x emissions. Appendix B contains the assumptions and calculations for estimating fuel usage associated with construction.

The fuel usage per construction worker commute round trips was calculated by assuming that each workers' gasoline vehicle would get a fuel economy rate of approximately 15 miles per gallon and would travel 30 miles round trip to and from the construction site in one day. As explained previously, a peak construction day is based on nine facilities with overlapping construction phases occurring on a given day. Table 2-7 lists the projected energy impacts associated with the construction from all affected facilities.

Table 2-7
Total Projected Fuel Usage for Construction Activities

Fuel Type	Year 2015 Estimated Basin Fuel Demand[a] (mmgal/yr)	Fuel Usage[b] (mmgal/yr)	Total % Above Baseline	Exceed Significance?[c]
Diesel	756	0.03	0.004	No
Gasoline	6,783	0.0057	0.0001	No

[a] California Annual Retail Fuel Outlet Report Results in 2015, 2015 California Energy Commission (http://www.energy.ca.gov/almanac/transportation_data/gasoline/2015_A15_Results.xlsx). [Accessed December 27, 2016.]
[b] Estimated peak fuel usage from construction activities. Diesel usage estimates are based on the usage of portable construction equipment and on-road vehicles conducting haul/delivery trips. Gasoline usage estimates are derived from construction workers' vehicle daily trips to and from work.
[c] SCAQMD's energy threshold for both types of fuel used is 1% of fuel supply.

The 2015 California Annual Retail Fuel Outlet Report Results from the California Energy Commission (CEC) state that 585 million gallons of diesel and 6,579 million gallons of gasoline were consumed in 2015 in the South Coast Air Basin. Thus, if an additional 26,451 gallons of diesel consumed and 5,771 gallons of gasoline are consumed during construction, no significant adverse impact on fuel supplies would be expected.

Operational Energy Impacts

Electricity Use

SCAQMD staff estimates there will be additional electricity usage for the new air pollution control equipment, including the ventilation systems needed to create negative air conditions in the total enclosures. The air pollution control equipment (baghouse with or without HEPA) and the ventilation systems (blowers) are expected to be powered by electricity.

The analysis assumes that 23 additional blowers would be needed to operate the air pollution control equipment and ~~5~~ 10 additional blowers to operate the ventilation systems needed to create negative air conditions at ~~five~~ 10 of the 22 facilities. The additional electricity consumption from operation is estimated and presented in Table 2-8. Electrical energy impacts associated with project operation are considered less than significant.

Table 2-8
PR 1430 Additional Electricity Consumption from Operation

Energy Use	Consumption (GW-h)
Air Pollution Control Equipment: Blowers and Baghouses (100 bhp @ 0.001788 GW-h) x 26	0.046
Blowers to create negative air conditions (100 bhp@ 0.001788 GW-h) x ~~6~~10	0.018~~1~~
Total Use:	0.06~~4~~57
SCAQMD Basin Electricity End Use Consumption [a,b]	120,210
Total Impact % of Capacity	**0.00005**
SIGNIFICANT?[b]	**NO**

[a] 2016 Draft Final SCAQMD AQMP Chapter 10, 2012 Electricity Use in GWh (http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/draft-final-aqmp/strikeout/11ch10-draft-final-120116.pdf)

[b] It is assumed the energy supply is equal to energy consumption.

[c] SCAQMD's energy threshold for electricity is 1% of supply.

Diesel Use From Trucks

Additional truck trips are expected to be needed for the additional source testing, filter replacement or inspection, and disposal of waste. Each truck is assumed to drive approximately 40 miles, round trip, with a fuel economy of approximately five miles per gallon (mpg) which would mean that each truck would use approximately 8 gallons (40 miles ÷ 5 mpg) of diesel fuel per round trip. As previously explained in Section III. Air Quality and Greenhouse Gases, by assuming that each facility will need 4 trucks per year, 88 trucks per year will be needed for all 22 facilities and the corresponding annual total diesel use would be 704 gallons per year.

Diesel Use From Aerial Lifts

PR 1430 requires roof cleaning of each facility on a semi-annual basis and aerial lifts are assumed to be needed in order for facility employees to be able to access the rooftops. For this analysis, the aerial lifts are assumed to be used for four hours per year at each facility. Diesel fuel use was estimated using a 1.4 gallon per hour fuel consumption rate from CARB's OFFROAD2007 database, which is an older version of OFFROAD2011, is the only model which provides the fuel usage data as an output. The diesel fuel use from one aerial lift is estimated to be approximately 5.6 gallons per year. The worst case for all 22 facilities utilizing aerial lifts according to the annual roof cleaning schedule would be that 123.2 gallons per year of diesel fuel would be consumed.

The 2015 California Annual Retail Fuel Outlet Report Results from California Energy Commission states that 585 million gallons of diesel are consumed in 2015 in South Coast Air Basin. Thus, based on the foregoing analysis and the summary presented in Table 2-9, an additional 827.2 gallons of diesel consumed per year of operation at all 22 facilities is not expected to have a significant adverse impact on fuel supplies.

Table 2-9
Annual Total Projected Fuel Usage for Operational Activities

Type of Equipment	Diesel (gal/yr)
Trucks	704
Aerial Lifts	123.2
Total:	827.2
Year 2015 Estimated Basin Fuel Demand (gal/yr) [a]	585,000,000
Total % Above Baseline	0.0001
SIGNIFICANT?[b]	**NO**

[a] California Annual Retail Fuel Outlet Report Results in 2012, 2015 California Energy Commission (http://www.energy.ca.gov/almanac/transportation_data/gasoline/2015_A15_Results.xlsx). [Accessed December 27, 2016.]

[b] SCAQMD's energy threshold for fuel used is 1% of fuel supply.

Natural Gas Impacts

None of the air pollution control equipment or ventilation systems requires natural gas for operation as these units require electricity. Similarly, none of the vehicles that may be needed to deliver supplies or haul away waste would require natural gas. Thus, no natural gas would be required to implement PR 1430.

Based on the foregoing analysis, the operational-related activities associated with the implementation of PR 1430 are necessary and will not use energy in a wasteful manner and will not result in substantial depletion of existing energy resource supplies. Further, as shown in the preceding analysis, the quantities of electricity, gasoline and diesel fuel needed to implement PR 1430 would not create a significant demand of energy when compared to existing supplies. Thus, there are no significant adverse energy resources impacts associated with the implementation of PR 1430.

Conclusion

Based upon these considerations, significant adverse energy impacts are not expected from implementing PR 1430. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VII.	**GEOLOGY AND SOILS.** Would the project:				
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☑
	• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☐	☑
	• Strong seismic ground shaking?	☐	☐	☐	☑
	• Seismic–related ground failure, including liquefaction?	☐	☐	☐	☑
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c)	Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☑
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☑
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑

Significance Criteria

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.

- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

VII. a) No Impact. Since PR 1430 would result in construction activities at existing facilities located in developed, mostly industrial and commercial settings, to install or modify buildings and air pollution control equipment, minor site preparation is anticipated that could adversely affect geophysical conditions in the District. While some new enclosures and air pollution controls may be installed at existing facilities, the project does not cause or require a new facility to be constructed.

Southern California is an area of known seismic activity. As part of the issuance of building permits, local jurisdictions are responsible for assuring that the Uniform Building Code is adhered to and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represents the foundation condition at the site. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction.

Accordingly, the installation of new or modification of existing enclosures or air pollution control equipment at existing facilities to comply with PR 1430 is expected to conform to the Uniform Building Code and all other applicable state and local building codes. Structures must be designed to comply with the Uniform Building Code Zone 4 requirements if they are located in a seismically active area. The local city or county is responsible for assuring that the existing affected facilities comply with the Uniform Building Code as part of the issuance of the building permits and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The goal of the code is to provide structures that will: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage but with some non-structural damage; and, 3) resist major earthquakes without collapse but with some structural and non-structural damage.

The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The Uniform Building Code bases seismic design on minimum lateral seismic forces (“ground shaking”). The basic formulas used for the Uniform Building Code

seismic design require determination of the seismic zone and site coefficient, which represent the foundation conditions at the site. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction.

Accordingly, existing buildings and equipment, as well as any that may be modified or replaced as a result of PR 1430, are likely to conform to the Uniform Building Code and all other applicable state codes in effect at the time they were constructed. Thus, PR 1430 would not alter the exposure of people or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. As a result, substantial exposure of people or structures to the risk of loss, injury, or death involving the rupture of an earthquake fault, seismic ground shaking, ground failure or landslides is not anticipated.

VII. b) Less than Significant Impact. Since PR 1430 would require the installation of new or the modification of existing buildings and air pollution control equipment at existing developed facilities, construction activities such as grading may be necessary to prepare a level foundation. As such, temporary erosion resulting from grading activities may be expected. However, these grading activities and any associated temporary erosion that may occur are expected to be relatively minimal since the existing facilities are generally flat and have previously been graded and paved. For this reason, no unstable earth conditions or changes in geologic substructures are expected to result from implementing PR 1430. It is important to note that potential air quality impacts related to grading are addressed in Section III as part of the construction air quality impact discussion.

Further, wind erosion is not expected to occur to any appreciable extent, because operators at sites with the potential to generate dust would be required to comply with the best available control measure (BACM) requirements of SCAQMD Rule 403 – Fugitive Dust. In general, operators must control fugitive dust through a number of soil stabilizing measures such as watering the site, using chemical soil stabilizers, revegetating inactive sites, etc. Therefore, impacts to the loss of topsoil and soil erosion are less than significant.

VII. c) No Impact. Since PR 1430 will affect existing facilities, it is expected that the soil types present at the affected facilities will not be made further susceptible to expansion or liquefaction. Furthermore, subsidence is not anticipated to be a problem since only minor excavation, grading, or filling activities are expected to occur at the affected facilities. Additionally, the areas where the existing facilities are located are not envisioned to be prone to new landslide impacts or have unique geologic features since the existing facilities are currently operational. Any installations of new or modifications to existing buildings or air pollution control equipment would not be expected to increase or exacerbate any existing risks at the affected facility locations. Therefore, because PR 1430 would not involve locating facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse, no impacts are anticipated.

VII. d) & e) No Impact. Since PR 1430 will affect metal grinding and metal cutting operations at existing facilities by requiring the installation of new or the modification of existing building and air pollution control equipment, people or property will not be exposed to new impacts related to expansive soils or soils incapable of supporting water disposal because no water will be necessary to operate the buildings or air pollution control equipment. Further, because each affected facility has an existing sewer system the installation of septic tanks or alternative

wastewater disposal systems or modifications to the existing sewer systems would not be necessary. Thus, implementation of PR 1430 will not adversely affect soils associated with a installing a new septic system or alternative wastewater disposal system or modifying an existing sewer.

Conclusion

Based upon these considerations, significant adverse geology and soils impacts are not expected from the implementation of PR 1430. Since no significant geology and soils impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VIII.	**HAZARDS AND HAZARDOUS MATERIALS.** Would the project:				
a)	Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?	☐	☐	☑	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐
c)	Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑	☐
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment?	☐	☐	☐	☑
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
g)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☑
h)	Significantly increased fire hazard in areas with flammable materials?	☐	☐	☑	☐

Significance Criteria

Impacts associated with hazards will be considered significant if any of the following occur:
- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

VIII. a) & b) Less than Significant Impact. PR 1430 may increase the amount of metal PM that is captured by air pollution control equipment, in lieu of being directly emitted into the air, which will in turn, cause a subsequent increase in the amount of metal particulate matter waste. Additional metal PM emissions will also be captured through facility owners/operators employing additional housekeeping practices on a regular basis. Overall, the capture of these metal PM emissions would reduce health risks to the public and the environment.

Spent metal is currently transported from affected facilities to offsite facilities that either recycle or dispose of the metal waste at a hazardous waste landfill. Once PR 1430 is implemented and the

construction of the total enclosures and air pollution control equipment is completed, the additional metals that will be captured by the new air pollution control systems would continue to be either recycled off-site or hauled away to a hazardous waste landfill, which is what the affected facilities are currently doing. Hence, no new significant hazards are expected to the public or environment through the continued routine transport, disposal or recycling of metal waste generated at metal forging facilities.

Therefore, PR 1430 is not expected to create a significant hazard to the public or environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment.

VIII. c) Less than Significant Impact. There are six facilities that are located within a one quarter mile of a school. These facilities and the names of the schools and their proximities are identified in Appendix C. PR 1430, if implemented, would reduce human exposure to toxics by requiring metal PM emissions from metal grinding and metal cutting operations to be collected and vented to air pollution control equipment instead of being vented to the atmosphere. All of the affected facilities, including the six that are located within one quarter mile of a school, are expected to continue to take the appropriate and required actions to ensure proper handling of existing quantities of hazardous or acutely hazardous materials, substances or wastes that are currently generated. Further, any increased quantities that may be collected at each facility by efficient collection systems and air pollution control equipment that will be employed as a result of PR 1430, would also be expected to be handled in the same or similar manner regardless of each facility's proximity to a school because PR 1430 does not include new requirements or alter existing requirements for hazardous waste disposal.

VIII. d) No Impact. Government Code §65962.5 refers to hazardous waste handling practices at facilities subject to the Resources Conservation and Recovery Act (RCRA). PR 1430 would affect four facilities that are identified on lists of California Department of Toxics Substances Control hazardous waste facilities per Government Code §65962.5. These facilities are identified in Appendix C. However, compliance with PR 1430 will ensure that metal PM, which may be toxic and hazardous, will be captured by air pollution control equipment. The more material that is captured, the less that will be emitted directly to the atmosphere. Currently, metal PM waste is stored and transported in closed containers and PR 1430 would not alter existing or add new requirements to change how the metal waste is stored while awaiting to be transported off-site to a recycling facility or a hazardous waste landfill. Hazardous wastes from the existing facilities are required to be managed in accordance with applicable federal, state, and local rules and regulations and compliance with these regulations is expected to continue after PR 1430 is implemented. Therefore, compliance with PR 1430 would not create a new significant hazard to the public or environment.

VIII. e) No Impact. One of the affected facilities, Continental Forge, is located within two miles of an airport (Compton Airport) but it is not located within the airport runway safety areas, airport runway protection zones, or within a transitional surface area which is required to be free of all obstructions. Therefore, if the owner/operator of Continental Forge makes modifications to its facility to comply with PR 1430, the modifications would not be expected to result in a safety hazard for people residing or working in the project area even within the vicinity of an airport.

VIII. f) No Impact. Health and Safety Code §25506 specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering

agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

- Identification of individuals who are responsible for various actions, including reporting, assisting emergency response personnel and establishing an emergency response team;
- Procedures to notify the administering agency, the appropriate local emergency rescue personnel, and the California Office of Emergency Services;
- Procedures to mitigate a release or threatened release to minimize any potential harm or damage to persons, property or the environment;
- Procedures to notify the necessary persons who can respond to an emergency within the facility;
- Details of evacuation plans and procedures;
- Descriptions of the emergency equipment available in the facility;
- Identification of local emergency medical assistance; and,
- Training (initial and refresher) programs for employees in:
    1. The safe handling of hazardous materials used by the business;
    2. Methods of working with the local public emergency response agencies;
    3. The use of emergency response resources under control of the handler;
    4. Other procedures and resources that will increase public safety and prevent or mitigate a release of hazardous materials.

In general, every county or city and all facilities using a minimum amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area.

Emergency response plans are typically prepared in coordination with the local city or county emergency plans to ensure the safety of not only the public (surrounding local communities), but the facility employees as well. The proposed project would not impair implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan. Further, the existing facilities already have an emergency response plan in place, as applicable. While the installation of air pollution control equipment and total enclosures may require an update of each affected facility's existing emergency response plan to reflect the new equipment or building modifications, the action of modifying an emergency response plan will not create any environmental impacts. Thus, PR 1430 is not expected to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

VIII. g) No Impact. The facilities affected by PR 1430 are currently located in existing industrial, commercial or mixed land use areas and are not located near wildlands; therefore, there is no existing risk from wildland fires and implementation of PR 1430 would not create a new risk.

The proposed project would also not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees since no substantial or native vegetation typically exists on or near the facilities (specifically because they could be a fire hazard). Thus, PR 1430 is not expected to expose people or structures to wildfires. Therefore, no significant increase in wildland fire hazards is expected at the facilities that would be affected by the proposed project.

VIII. h) Less Than Significant Impact. The Uniform Fire Code and Uniform Building Code set standards intended to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulations. Local fire agencies require permits for the use or storage of hazardous materials and permit modifications for proposed increases in their use. Permit conditions depend on the type and quantity of the hazardous materials at the facility. Permit conditions may include, but are not limited to, specifications for sprinkler systems, electrical systems, ventilation, and containment. The fire departments make annual business inspections to ensure compliance with permit conditions and other appropriate regulations. Further, businesses are required to report increases in the storage or use of flammable and otherwise hazardous materials to local fire departments. Local fire departments ensure that adequate permit conditions are in place to protect against the potential risk of upset. PR 1430 would not change the existing requirements and permit conditions for the proper handling of flammable materials. Further, PR 1430 does not contain any requirements that would prompt facility owners/operators to begin using new flammable materials. In addition, the National Fire Protection Association has special designations for deflagrations (e.g., explosion prevention) from metal dust. Therefore, operators of metal grinding activities that require baghouse emission control technologies will also need to select reliable, economical and effective means of explosion control such as baghouse explosion suppression, containment and venting. Additional information pertaining to these types of protective measures is available in Chapter 8 of the *Industrial Ventilation, A Manual for Recommended Practice for Design*, 28th Edition, published by the American Conference of Governmental Industrial Hygienists, ©2013.

Conclusion

Based upon these considerations, significant adverse hazards and hazardous materials impacts are not expected from implementing PR 1430. Since no significant hazards and hazardous materials impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IX.	**HYDROLOGY AND WATER QUALITY.** Would the project:				
a)	Violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality?	☐	☐	☑	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☑
c)	Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site or flooding on- or off-site?	☐	☐	☐	☑
d)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☑
e)	Place housing or other structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, which would impede or redirect flood flows?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☑
g)	Require or result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☑	☐
h)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☑	☐
i)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☑	☐

Significance Criteria

Potential impacts on water resources will be considered significant if any of the following criteria apply:

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 262,820 gallons per day of potable water.
- The project increases demand for total water by more than five million gallons per day.

Water Quality:

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.

- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

IX. a) Less than Significant Impact. PR 1430 contains requirements for facility owners/operators to conduct metal grinding and metal cutting operations within total enclosures and to vent these total enclosures to air pollution control equipment such as baghouses and HEPA filters. The ventilation systems, baghouses and HEPA filters do not utilize water as part of their day-to-day functions. Thus, no wastewater will be generated from the use of air pollution control equipment to control emissions from metal grinding and metal cutting activities.

PR 1430 also contains housekeeping requirements that require facility owners/operators to clean: 1) the roof tops that house areas associated with metal grinding or metal cutting operations on a semi-annual basis; 2) the inside of the building or total enclosure areas where metal grinding or metal cutting operations occur on a monthly basis; 3) areas where metal containing wastes generated from metal grinding or metal cutting operations are stored, disposed of, recovered or recycled on a daily basis; 4) floors within 20 feet of metal grinding and metal cutting work stations or any entrance/exit point for an existing enclosure or total enclosure on a daily basis; and, 5) floors within 10 feet of an emission control device dedicated to metal grinding or metal cutting operations on a daily basis. When employing these housekeeping efforts, PR 1430 provides facility owners/operators with a choice of using either wet cleaning or dry HEPA vacuuming. If dry HEPA vacuuming is used to comply with the housekeeping requirements, then no water would be needed and no wastewater would be generated. There are 22 facilities that would be required to conduct housekeeping and some facility operators have indicated to SCAQMD staff during site visits that they would prefer to conduct dry HEPA vacuuming in lieu of wet cleaning because dry HEPA vacuuming would allow for the recycling and sale of the captured precious metals. Further, facility owners/operators indicated that wet cleaning would be less preferable because it would require the use of water and the treatment of the cleaning water prior to disposal, which may increase costs.

Nonetheless, because PR 1430 provides wet cleaning as an option for complying with the housekeeping requirements, this analysis assumes that wet cleaning could potentially occur and wastewater may be generated as a result. For any facility owner/operator that chooses to conduct wet cleaning, but that does not currently have a wastewater treatment system or a wastewater discharge permit, the dirty water resulting from wet cleaning would need to be collected, stored

and disposed of as hazardous materials and these facilities would be required to comply with the applicable hazardous waste disposal regulations. Thus, the collected dirty water at these facilities would not be allowed to be discharged as wastewater.

For any affected facility that has a wastewater discharge permit, the owner/operator will be required to comply with the permitted effluent discharge concentration and flow limits which means the any wastewater generated from conducting housekeeping via wet cleaning would likely need to be treated prior to discharge.

In either of these scenarios, wet cleaning conducted in accordance with complying with the housekeeping requirements in PR 1430 would not be expected to violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable of the Publicly Owned Treatment Works (POTW) or Regional Water Quality Control Board, or otherwise substantially degrade water quality that the requirements are meant to protect.

IX. b) No Impact. As previously explained, water is not needed to operate the total enclosures and vent the metal grinding and metal cutting operations to air pollution control equipment. For any facility owners/operators that choose to conduct wet cleaning, any additional water needed would likely be supplied by each facility's current water supplier. Further, the quality of water that would likely be supplied to each affected facility will be potable water since potable water is currently supplied at all of the affected facilities in order to provide drinking water for employees, water for sinks and toilets, and water for any landscaping, if applicable. Should any of the affected facilities have a groundwater well onsite with groundwater pumping rights, the facility owners/operators would not likely choose to use groundwater in lieu of potable water to conduct wet cleaning because groundwater typically contains sand and other soil particles and debris which would not be a suitable quality for conducting wet cleaning. Therefore, implementation of PR 1430 would not be expected to cause facilities to utilize groundwater for conducting wet cleaning, substantially deplete groundwater supplies, or interfere substantially with groundwater recharge.

IX. c) & d) No Impact. PR 1430 contains requirements for facility owners/operators to conduct metal grinding and metal cutting operations within total enclosures and to vent these total enclosures to air pollution control equipment such as baghouses and HEPA filters. Facilities that are not currently equipped with total enclosures that vent to air pollution control equipment will be required to construct the total enclosures and install ventilation and air pollution control equipment such as baghouses and HEPA filters. Because the ventilation systems, baghouses and HEPA filters do not utilize water as part of their day-to-day functions, no new drainage facilities or alterations to existing drainage facilities will be needed beyond what currently exists at the existing facilities. Similarly, there are no streams or rivers running through the properties of the existing facilities, so any construction activities that may occur as a result of complying with PR 1430 would not be expected to alter the course of a stream or river. Finally, as part of building the total enclosures and installing the ventilation and air pollution control systems, some minor earthwork will be needed to prepare the affected areas for a new foundation at each affected facility. Any construction activities, however, would not be expected to permanently create unpaved areas that would be vulnerable to surface runoff, erosion, siltation or flooding, either on- or offsite. Thus, PR 1430 is not expected to have any significant adverse effects on any existing drainage patterns, or cause an increase rate or amount of surface runoff water that would exceed the capacity of the facilities' existing or planned storm water drainage systems because PR 1430 does not contain any requirements that would change existing drainage patterns or the procedures for how surface runoff water is handled.

IX. e) & f) No Impact. The facilities affected by PR 1430 are currently located in existing industrial, commercial or mixed land use areas. Since PR 1430 would result in construction activities at existing facilities to install or modify buildings, total enclosures, and air pollution control equipment, some minor site preparation and construction activities may be necessary. However, while some new total enclosures and air pollution control equipment may be installed at existing facilities, PR 1430 would not cause or require a new facility or new housing to be constructed. Further, the construction of the new total enclosures and air pollution control equipment would occur on-site at the existing facilities. Therefore, PR 1430 is not expected to result in placing housing or structures in 100-year flood hazard areas that could create new flood hazards or create significant adverse risk impacts from flooding as a result of failure of a levee or dam or inundation by seiches, tsunamis, or mudflows.

IX. g) and i) Less than Significant Impact. As explained in Section IX. a), PR 1430 provides facility owners/operators with a choice of using either wet cleaning or dry HEPA vacuuming. If dry HEPA vacuuming is used to comply with the housekeeping requirements, then no water would be needed and no wastewater would be generated. There are 22 facilities that would be required to conduct housekeeping and some facility operators have indicated to SCAQMD staff during site visits that they would prefer to conduct dry HEPA vacuuming in lieu of wet cleaning because dry HEPA vacuuming would allow for the recycling and sale of the captured precious metals. Further, wet cleaning would be less preferable because it would require the use of water and the treatment of the cleaning water prior to disposal.

Nonetheless, because PR 1430 provides wet cleaning as an option for complying with the housekeeping requirements, this analysis assumes that some wet cleaning could occur and wastewater may be generated. SCAQMD staff is unable to predict with any precision the number of facilities that will actually elect to conduct wet cleaning, the amount of water that would be needed, and the amount of wastewater that may be generated as part of conducting wet cleaning to comply with PR 1430.

To get an idea of the scale of water and water quality impacts that might occur from conducting wet cleaning to comply with PR 1430, SCAQMD staff consulted the hydrology and water quality analysis contained in the Final Environmental Assessment for Rule 1420.2 – Emissions Standards for Lead from Metal Melting Facilities Final Environmental Assessment (October 2015)[14], because Rule 1420.2 contains similar housekeeping requirements to those in PR 1430 and the calculated water use estimates for conducting wet cleaning to comply with Rule 1420.2 was based on a peak daily use. Table 2-10 compares the housekeeping requirements contained in PR 1430 with those adopted in Rule 1420.2.

[14] SCAQMD, Final Environmental Assessment for Proposed Rule 1420.2 - Emissions Standards for Lead from Lead Melting Facilities, certified October 2, 2015. http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2015/pr-1420_2-final-ea.pdf

Table 2-10
Comparison of Housekeeping Requirements in PR 1430 and Rule 1420.2

PR 1430			Rule 1420.2		
Cleaning Task	**Cleaning Method**	**Cleaning Frequency**	**Cleaning Task**	**Cleaning Method**	**Cleaning Frequency**
Areas where metal containing wastes generated from metal grinding or metal cutting operations are stored, disposed of, recovered or recycled	Wet cleaning or Dry HEPA Vacuuming	Daily	Areas where lead-containing wastes generated from housekeeping activities are stored, disposed of, recovered or recycled	Wet cleaning or Dry HEPA Vacuuming	Weekly
Floors within 20 feet of metal grinding and metal cutting work stations or any entrance/exit point for an existing enclosure or total enclosure	Wet cleaning or Dry HEPA Vacuuming	Daily	Surfaces that accumulate lead-containing dust subject to foot traffic.	Wet cleaning or Dry HEPA Vacuuming	Weekly
Floors within 10 feet of an emission control device dedicated to metal grinding or metal cutting operations	Wet cleaning or Dry HEPA Vacuuming	Daily			
Inside of the building or total enclosure areas where metal grinding or metal cutting operations occur on a basis	Wet cleaning or Dry HEPA Vacuuming	Monthly			
Roof tops that house areas associated with metal grinding or metal cutting operations	Wet cleaning or Dry HEPA Vacuuming	Semi-annually	Cleanings of roof tops on structures > 45 feet in height that house areas associated with the processing, handling, or storage of lead-containing materials capable of generating any amount of fugitive lead-dust, excluding areas associated with the storage of raw, unprocessed lead-containing materials or finished lead-containing products	Wet cleaning or Dry HEPA Vacuuming	Semi-annually
			Cleanings of roof tops on structures < 45 feet in height that house areas associated with the processing, handling, or storage of lead-containing materials capable of generating any amount of fugitive lead-dust, excluding areas associated with the storage of raw, unprocessed lead-containing materials or finished lead-containing products	Wet cleaning or Dry HEPA Vacuuming	Quarterly

The hydrology and water quality analysis for Rule 1420.2 estimated that 13 facilities would need a total of 82,372 gallons per day of water and an equivalent amount of wastewater would be generated, which equates to approximately 6,406 gallons per day of water needed and wastewater generated at each facility that conducts wet cleaning to comply with the housekeeping measures. As illustrated in Table 2-9, the cleaning frequencies for the various tasks do not exactly align such that in some cases, the cleaning frequency would be less often under PR 1430 than for Rule 1420.2 while in other cases, the cleaning frequency is more often. Nonetheless, this comparison provides helpful information to grasp what the overall water demand and wastewater impacts from implementing PR 1430 could be.

For PR 1430, while there are 22 facilities that would be required to comply with the housekeeping requirements, facility owners/operators indicated a preference for conducting dry HEPA vacuuming in lieu of wet cleaning. Thus, not all 22 facilities would be expected to conduct wet cleaning to comply with the housekeeping requirements in PR 1430. For a conservative analysis, half of affected facilities (e.g., 11) were assumed to conduct wet cleaning on the same day to comply with the housekeeping requirements in PR 1430. By applying the maximum amount of water that was estimated to be needed per facility for Rule 1420.2 (e.g., 6,406 gallons per day), then an equivalent amount of wastewater may also be generated per facility.

If the maximum amount of water that could be used by 11 facilities on a peak day to conduct wet cleaning in response to PR 1430 is equivalent to the analysis in Rule 1420.2, then PR 1430 could require 70,466 gallons of water to conduct wet cleaning and could generate the same amount as wastewater (e.g., 11 facilities x 6,406 gallons per day). Based on the facility owner/operator preference to use dry HEPA vacuuming, SCAQMD staff believes that the estimated use of water and the corresponding generation of wastewater on a peak day probably substantially overestimates what the actual impact may be. Also, it is important to keep in mind that the maximum amount of water needed to conduct wet cleaning at one facility was estimated to be 6,406 gallons per day so any wastewater generated at an individual facility should be well within the existing and projected overall capacity of POTWs located throughout the District whenever the wet cleaning activities are conducted. Therefore, wastewater impacts associated with the disposal of waterborne clean-up waste material generated from implementing PR 1430 are not expected to significantly adversely affect POTW operations. Further, the small volume of wastewater that may be generated from wet cleaning would not be expected to require or warrant the construction of new or the expansion of existing wastewater treatment or storm water drainage facilities.

IX. h) Less than Significant Impact. As explained in Section IX. g) and i), if half of affected facilities (e.g., 11) are assumed to conduct wet cleaning on the same day at the same water demand rate that was estimated in the hydrology and water quality analysis for Rule 1420.2, then the maximum amount of water that may be needed per facility would be 6,406 gallons per day or 70,466 gallons per day for 11 facilities. Table 2-11 summarizes the projected amount of water that may be needed for the 11 affected facilities to conduct wet cleaning to comply with the housekeeping requirements in PR 1430.

Table 2-11
Projected Water Demand

PR 1430 Wet Cleaning Activity	Additional Water Demand on a Peak Day (gal/day)
PR 1430 Housekeeping Measures	70,466
Significance Threshold for Potable Water:	262,820
SIGNIFICANT FOR POTABLE WATER?	**NO**
Significance Threshold for Total Water:	5,000,000
SIGNIFICANT FOR TOTAL WATER?	**NO**

Therefore, since the estimated potable water demand and total water demand would be less than significance thresholds for potable and total water, respectively, the water demand impacts that are expected occur from implementing PR 1430 would be less than significant. Further, existing water supplies are expected to be sufficiently available to serve the proposed project from existing entitlements and resources without the need for new or expanded entitlements because the projected increased water demand is based on a peak day, but that amount of water will not be needed every day. Therefore, PR 1430 is not expected to have significant adverse water demand impacts.

Conclusion

Based upon these considerations, significant adverse hydrology and water quality impacts are not expected from implementing PR 1430. Since no significant hydrology and water quality impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☑
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

Significance Criteria

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

X. a) No Impact. PR 1430 does not require the construction of new facilities, and any physical effects that will result from PR 1430, will occur at existing facilities located in commercial/industrial areas and would not be expected to go beyond existing boundaries. For this reason, implementation of PR 1430 would not be expected to physically divide an established community. Therefore, no impacts are anticipated.

X. b) No Impact. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by PR 1430. All construction and operation activities that are expected to occur as a result of complying with PR 1430 will occur within the confines of the existing facilities and would not be expected to affect or conflict with any applicable land use plans, policies, or regulations. Further, no new development or alterations to existing land designations will occur as a result of the implementation of PR 1430. Therefore, present or planned land uses in the region will not be affected as a result of implementing PR 1430.

Conclusion

Based upon these considerations, significant adverse land use and planning impacts are not expected from implementing PR 1430. Since no significant land use and planning impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XI.	**MINERAL RESOURCES.** Would the project:				
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b)	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☑

Significance Criteria

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XI. a) & b) No Impact. PR 1430 would require the installation of new or the modification of existing buildings and air pollution control equipment. The construction and operation activities necessary to implement PR 1430 would not require the use of a known mineral resource. Thus, there are no provisions in PR 1430 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state such as aggregate, coal, clay, shale, et cetera, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Conclusion

Based upon these considerations, significant adverse mineral resource impacts are not expected from implementing PR 1430. Since no significant mineral resource impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XII. NOISE. Would the project result in:				
a) Exposure of persons to or generation of permanent noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☑	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑	☐
c) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐
d) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☑	☐

Significance Criteria

Noise impact will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities

affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XII. a), b), & c) Less than Significant Impact. The facilities affected by PR1430 are currently located in urbanized industrial or commercial areas. The existing noise environment at each of the facilities is typically dominated by noise from existing equipment on-site, vehicular traffic around the facilities, and trucks entering and exiting facility premises. Large, potentially noise-intensive construction equipment would be needed temporarily to build new or modify existing enclosures and install new or modify existing air pollution control equipment as part of implementation of PR 1430. Operation of the construction equipment would be expected to comply with all existing noise control laws and ordinances. Since the facilities are located in industrial and commercial areas, which have a higher background noise level when compared to other areas, the noise generated during construction will likely be indistinguishable from the background noise levels at the property line.

Once the construction of the enclosures is complete, the outdoor noise from the metal grinding and metal cutting activities will be located within the enclosures as required by PR 1430. Thus, the existing noise from these activities is expected to be lessened compared to what is currently being generated on-site. Similarly, for any facility that installs new air pollution control devices such as baghouses and/or HEPA filters, substantial amounts of noise are not typically produced by these types of devices. Due to the attenuation rate of noise based on distance from the source, it is unlikely that noise levels exceeding local noise ordinances from operation new air pollution control equipment would occur beyond a facility's boundaries. Furthermore, OSHA and CAL-OSHA have established noise standards to protect worker health. Furthermore, compliance with local noise ordinances limiting the hours of construction will reduce the temporary noise impacts from construction to sensitive receptors. These potential noise increases are expected to be within the allowable noise levels established by the local noise ordinances for industrial areas, and thus are expected to be less than significant.

XII. d) Less than Significant Impact. One of the affected facilities, Continental Forge, is located within two miles northeast of the Compton Airport but it is not located within the airport runway safety areas, airport runway protection zones, or within a transitional surface area which is required to be free of all obstructions[15]. However, compliance with PR 1430 would not expose people residing or working in the vicinity of Continental Forge to the same degree of excessive noise levels associated with airplanes because all noise producing equipment at Continental Forge, as well as at all the other affected facilities, must comply with local noise ordinances and applicable OSHA or CAL-OSHA workplace noise reduction requirements. Therefore, the impacts are expected to be less than significant.

Conclusion

Based upon these considerations, significant adverse noise impacts are not expected from the implementing PR 1430. Since no significant noise impacts were identified, no mitigation measures are necessary or required.

[15] Compton Airport Master Plan Report, County of Los Angeles, Compton, California, August 1991.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING. Would the project:				
a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	☐	☐	☐	☑
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Significance Criteria

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XIII. a) No Impact. The construction activities associated with PR 1430 at each affected facility are not expected to involve the relocation of individuals, require new housing or commercial facilities, or change the distribution of the population. On a peak day, the analysis assumes up to 15 workers may be needed to perform construction activities to comply with PR 1430 at each affected facility and these workers can be supplied from the existing labor pool in the local Southern California area. Further, it is not expected that the installation of new or the modification of existing buildings and air pollution control equipment would require new employees to operate and maintain the equipment because several of the facilities already have existing air pollution control equipment in place with personnel trained to maintain the equipment. In the event that new employees are hired, it is expected that the number of new employees hired at any one facility would be relatively small, perhaps no more than one or two per facility. The human population within the District is anticipated to grow regardless of implementing PR 1430. As a result, PR 1430 is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth in the District or population distribution.

XIII. b) No Impact. PR 1430 affects operations at existing metal forging facilities and as previously explained in Section III – Air Quality, SCAQMD staff is not aware of any new metal forging facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if any, would be built in the long-term. Thus, PR 1430 is not expected to result in the creation of any industry that would affect population growth, directly or indirectly or cause the displacement of substantial numbers of people that would induce the construction of replacement housing elsewhere in the District. .

Conclusion

Based upon these considerations, significant adverse population and housing impacts are not expected from implementing PR 1430. Since no significant population and housing impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES. Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
a) Fire protection?	☐	☐	☑	☐
b) Police protection?	☐	☐	☑	☐
c) Schools?	☐	☐	☐	☑
d) Other public facilities?	☐	☐	☐	☑

Significance Criteria

Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XIV. a) & b) Less Than Significant Impact. Implementation of PR 1430 is expected to cause facility operators to install new or modify existing buildings and air pollution control devices, all the while continuing current operations at existing affected facilities. New safety hazards are not expected to occur during construction because the construction activities would not involve the use or handling of hazardous materials. The metal PM to be captured by the air pollution control devices, once they become operational, may be explosive in nature. Thus, the design of the air pollution control equipment will need to conform to the National Fire Protection Association standards which have special designations for deflagrations (e.g., explosion prevention) from metal dust. Additional information pertaining to these types of protective measures is available in Chapter 8 of the *Industrial Ventilation, A Manual for Recommended Practice for Design*, 28th Edition, published by the American Conference of Governmental Industrial Hygienists, ©2013.

The increased use of air pollution control equipment, housekeeping and maintenance activities, or the temporary use of construction worker vehicles and delivery trucks would not be expected to substantially alter or increase the need or demand for additional public services (e.g., fire and police departments and related emergency services, et cetera) above current levels, so no significant impact to these existing services is anticipated.

XIV. c) No Impact. As noted in the previous "Population and Housing" discussion, PR 1430 is not expected to induce population growth in any way because the local labor pool (e.g., workforce) is expected to be sufficient to accommodate 15 construction workers to perform any construction activities that may be necessary at affected facilities and operation of new or modified air pollution control equipment is not expected to require additional employees. Even in the event that new employees are hired, it is expected that the number of new employees at any one facility would be small, no more than one or two per facility. Therefore, with no significant increase in local population, no impacts would be expected to local schools.

XIV. d) No Impact. PR 1430 is expected to result in the construction of enclosures and the installation and use of new or modified air pollution control equipment. Besides obtaining building permits from the local agency and SCAQMD permits for installing air pollution control equipment, there is no need for other types of government services. PR 1430 would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives. As explained earlier, there will be no substantive increase in population as a result of implementing PR 1430, and, therefore, no need for physically altered government facilities.

Conclusion

Based upon these considerations, significant adverse public services impacts are not expected from implementing PR 1430. Since no significant public services impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment or recreational services?	☐	☐	☐	☑

Significance Criteria

Impacts to recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XV. a) & b) No Impact. As explained previously in Section XIII - Population and Housing," the operators of affected facilities who need to perform any construction activities to comply with PR 1430 can draw from the existing labor pool in the local Southern California area. Further, it is not expected that the installation of new or the modification of existing buildings and air pollution control equipment would require new employees to operate and maintain the equipment because several of the facilities already have existing air pollution control equipment in place with

personnel trained to maintain the equipment. In the event that new employees are hired, it is expected that the number of new employees hired at any one facility would be relatively small, perhaps no more than one or two per facility. The human population within the District is anticipated to grow regardless of implementing PR 1430. As a result, PR 1430 is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth in the District or population distribution. Further, there are no provisions in PR 1430 that would affect or increase the demand for or use of existing neighborhood and regional parks or other recreational facilities. Further PR 1430 would not require the construction of new or the expansion of existing recreational facilities that might, in turn, cause adverse physical effects on the environment because PR 1430 will not directly or indirectly substantively increase or redistribute population.

Conclusion

Based upon these considerations, significant adverse recreation impacts are not expected from implementing PR 1430. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVI. SOLID AND HAZARDOUS WASTE. Would the project:				
a) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☑	☐
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	☐	☐	☐	☑

Significance Criteria

The proposed project impacts on solid and hazardous waste will be considered significant if the following occurs:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XVI. a) Less than Significant Impact. Landfills are permitted by the local enforcement agencies with concurrence from the California Department of Resources Recycling and Recovery (CalRecycle). Local agencies establish the maximum amount of solid waste which can be received by a landfill each day and the operational life of a landfill. This analysis of solid waste impacts assumes that safety and disposal procedures required by various agencies in California will provide reasonable precautions against the improper disposal of hazardous wastes in a municipal waste landfill. Because of state and federal requirements, some facilities are attempting to reduce or minimize the generation of solid and hazardous wastes by incorporating source reduction technologies to reduce the volume or toxicity of wastes generated, including improving operating procedures, using less hazardous or nonhazardous substitute materials, and upgrading or replacing inefficient processes.

PR 1430 would require the installation of new or the modification of existing buildings, total enclosures, and air pollution control equipment. In the worst case, the analysis assumes that five existing buildings will be demolished, 600 cubic yards of soil for one building and 300 cubic yards of soil for each of the four buildings will need to be imported and exported. IN addition, 26 existing baghouses will be demolished creating 640 cubic yards of solid waste per baghouse. In total, up to 18,440 cubic yards of solid waste is estimated to be generated during construction.

In addition, the operation of air pollution control equipment such as baghouses and/or HEPA filters could generate solid waste from the collection of metal PM and from the replacement of torn bags and spent filters in the baghouses and HEPA systems, respectively.

Filtration includes usage of baghouse and/or HEPA filters. Mixed metal compounds could be captured with the use of filtration controls at a 99.9 percent control rate. Currently, each affected facility sends their metal materials for recycling or disposal at a hazardous waste landfill. Based on the number of air pollution control equipment that may be needed at the affected facilities, the analysis shows that spent filters, torn bags, and waste collected by the baghouses may generate up to 16,640 cubic yards per year of hazardous waste.

The estimated solid waste from these activities is summarized in Table 2-12.

Table 2-12
Total Solid Waste Generation

Control Type	Potential Number of Affected Units	Total Waste Generated (cubic yards)
Demolition of existing old baghouses and foundation	26	18,440 (construction phase: one-time only)
Demolition of buildings	5	
Disposal of Torn Bags and Spent Filters	26	640 (each) 16,640 (total, worst-case, per year)

The nearest RCRA landfills are Republic Services and US Ecology. The Republic Services La Paz County Landfill has approximately 20,000,000 cubic yards of capacity remaining for the 50 year life expectancy (400,000 cubic yards per year). The US Ecology, Inc., facility in Beatty, Nevada has approximately 638,858 cubic yards of capacity remaining for the three year life expectancy (212,952 cubic yards per year). US Ecology, Inc., currently receives approximately 18,000 cubic yards per year of waste, so 194,952 cubic yards per year (212,952 cubic yards per year – 18,000 cubic yards per year) would be available should any of the affected facilities elect to dispose of their hazardous materials at this facility.

With a disposal of 16,640 cubic yards per year of filters, baghouse fabrics, and metals, the total solid and hazardous waste impacts from PR 1430 are conservatively estimated at 4 percent and 8.5 percent of the available Republic Services and US Ecology landfill capacity, respectively. Thus, the amount of hazardous waste that may be generated by the proposed project is relatively small, would not be considered to create a significant demand on existing landfill capacity, and would not likely require new RCRA landfills to be built.

Finally, all new enclosures and air pollution control equipment are expected to be installed within the currently developed footprint at already existing facilities. Because the newly installed control equipment has a finite lifetime (approximately 20 years), it will ultimately have to be replaced at the end of its useful life. Affected equipment may be refurbished and used elsewhere or the scrap metal or other materials from replaced units has economic value and is expected to be recycled, so any solid or hazardous waste impacts specifically associated with the proposed project are expected to be minor. As a result, no substantial change in the amount or character of solid or hazardous waste streams is expected to occur.

Because the waste disposal needs that will occur from implementing PR 1430 are expected to be served by landfills with sufficient permitted capacity to accommodate the project's solid waste disposal needs, potential solid and hazardous waste impacts from implementing PR 1430 would not be significant.

XVI. b) No Impact. It is assumed that facility operators at the facilities currently comply with all applicable local, state, or federal waste disposal regulations and PR 1430 does not contain any provisions that would alter current practices. Thus, implementation of PR 1430 is not expected to interfere with any affected facility's ability to comply with applicable local, state, or federal waste disposal regulations in a manner that would cause a significant adverse solid and hazardous waste impact.

Conclusion

Based upon these considerations, significant adverse solid and hazardous waste impacts are not expected from implementing PR 1430. Since no significant solid and hazardous waste impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVII.	**TRANSPORTATION AND TRAFFIC.** Would the project:				
a)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☑	☐
b)	Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☑	☐
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☑
d)	Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☐	☑
e)	Result in inadequate emergency access?	☐	☐	☐	☑
f)	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☑

Significance Criteria

Impacts on transportation and traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- The project conflicts with applicable policies, plans or programs establishing measures of effectiveness, thereby decreasing the performance or safety of any mode of transportation.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.
- The need for more than 350 employees.
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day.
- Increase customer traffic by more than 700 visits per day.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XVII. a) & b) Less Than Significant Impact

Construction

As previously discussed in Section III - Air Quality and Greenhouse Gas Emissions, compliance with PR 1430 may require construction activities associated with installing new buildings, total enclosures with or without ventilation to create negative air conditions, and air pollution control equipment. Approximately 36 delivery and/or disposal trucks plus 15 construction worker trips for a total of 51 construction round trips are assumed to be needed on a peak construction day for five facilities with overlapping construction schedules. Thus, construction is not expected to affect on-site traffic or parking for each affected facility. Further, since the additional 51 construction round trips that may occur on a peak day are well below the significant threshold of 350 round

trips, traffic and transportation impacts during construction are not expected to cause a significance adverse impact.

Operation

Air pollution control equipment used to comply with PR 1430 will collect toxic PM waste products from metal grinding and metal cutting activities, as well as dry solids from spent filters and torn bags. These wastes will need to be transported off-site from each facility to either disposal or recycling facilities. In addition, fresh filters will be needed to replace the spent filters and these will need to be delivered to each facility. Similarly, fresh bags will be needed to replace torn bags and these will also need to be delivered to each facility as needed. Finally, since all of the affected facilities will be required to conduct source tests to comply with PR 1430, workers needed to conduct the source tests will also generate trips. All of the trips need to haul wastes and deliver supplies as well as conduct source tests will contribute to operational traffic and transportation impacts.

For a "worst case" analysis, SCAQMD staff assumed that for the 22 facilities on a peak day would generate a maximum of 44 new truck trips (round trips) during operation to haul away collected waste, to account for worker trips needed to conduct source testing, and to inspect, replace and dispose of filters. While these truck trips are assumed to overlap on a given day, the 44 round trips that may occur are not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near each of the affected facilities. In fact, this low volume of additional daily truck traffic is negligible over the entire District. Further, as previously explained in Section XII – Population and Housing, the installation of new or the modification of existing buildings and air pollution control equipment would not be expected to require new, additional permanent employees to operate and maintain the equipment because several of the facilities already have existing air pollution control equipment in place with personnel trained to maintain the equipment. In the event that new employees are hired, it is expected that the number of new employees hired at any one facility would be relatively small, perhaps no more than one or two per facility. Thus, even for the trips that would be associated with employing a small amount of new workers at each affected facility, implementation of PR 1430 is not expected to cause a significant increase in the number of worker trips during operation at any of the affected facilities. The estimated vehicles from all activities is summarized in Table 2-13.

Table 2-13
Estimation of Vehicle Trips

Phase	Worker Vehicles	Delivery/Disposal Trucks
Construction [a]	15 per day	36 per day
Operation	Up to 4 additional vehicles per facility for a maximum of 44 vehicles per day[b]	

[a] The worst case analysis for construction is based on a maximum of 15 worker vehicles plus 36 delivery/disposal trucks per day at five facilities during a peak day to account for overlapping construction.

[b] The worst case analysis during operation is based on a maximum of 44 truck trips (round-trips) for the additional source testing, worker vehicles, filter/bag replacement or inspection, and disposal at 11 facilities overlapping during operation.

XVII. c) No Impact. As explained previously in Section XII – Noise, only one of the affected facilities, Continental Forge, is located within two miles of an airport (Compton Airport) but it is not located within the airport runway safety areas, airport runway protection zones, or within a transitional surface area which is required to be free of all obstructions[16]. Thus, compliance with PR 1430 would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risk

XVII. d) & e) No Impact. PR 1430 does not involve or require the construction of new roadways because the focus of PR 1430 is on controlling toxic and PM emissions from existing metal forging facilities that conduct metal grinding and metal cutting operations. Thus, there will no change to current public roadway designs that could increase traffic hazards. Further, PR 1430 is not expected to substantially increase traffic hazards or create incompatible uses at or adjacent to the facilities. Emergency access at each of the affected facilities is not expected to be impacted because PR 1430 does not contain any requirements specific to emergency access points and each affected facility is expected to continue to maintain their existing emergency access. Further, the total enclosure requirements in PR 1430 do not contain any specifications relative to any facility's emergency access. Since PR 1430 is expected to involve short-term construction activities that would create new, minor delivery/haul truck trips that would be expected to cease after construction is completed, the proposed project is not expected to alter the existing long-term circulation patterns within the areas of each affected facility during construction. Similarly, during operation, the projected increase of additional vehicle trips that may be needed at each affected facility would be at less than significant levels individually and cumulatively such that implementation of the proposed project is not expected to require a modification to circulation. Thus, no long-term impacts on the traffic circulation system are expected to occur during construction or operation.

XVII. f) No Impact. PR 1430 does not contain any requirements that would affect or alter adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Further, the facilities would still be expected to comply with, and not interfere with adopted policies, plans, or programs supporting alternative transportation (e.g., bicycles or buses) that exist in their respective cities. Since all of the requirements and compliance activities associated with implementing PR 1430 would be expected to occur on-site, PR 1430 would have no impact on each facility's ability to comply with any applicable alternative transportation plans or policies.

Conclusion

Based upon these considerations, significant adverse transportation and traffic impacts are not expected from implementing PR 1430. Since no significant transportation and traffic impacts were identified, no mitigation measures are necessary or required.

[16] Compton Airport Master Plan Report, County of Los Angeles, Compton, California, August 1991.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☑
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	☐	☐	☑	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

Discussion

XVIII. a) No Impact. As explained in Section IV - Biological Resources, PR 1430 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because any construction and operational activities associated with the facilities are expected to occur entirely within the boundaries of existing developed facilities in areas that have been greatly disturbed and that currently do not support any species of concern or the habitat on which they rely. For these reasons, PR 1430 is not expected to reduce or eliminate any plant or animal species or destroy prehistoric records of the past.

XVIII. b) Less Than Significant Impact. Based on the foregoing analyses, PR 1430 would not result in significant adverse project-specific environmental impacts. Potential adverse impacts from implementing PR 1430 would not be "cumulatively considerable" as defined by CEQA Guidelines §15064(h)(1) for any environmental topic because there are no, or only minor incremental project-specific impacts that were concluded to be less than significant. Per CEQA

Guidelines §15064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulative considerable. SCAQMD cumulative significant thresholds are the same as project-specific significance thresholds.

This approach was upheld by the Court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that where it can be found that a project did not exceed the SCAQMD's established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines §15064.7, stating, "The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect." The court found that, "Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria…" "Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact." As in *Chula Vista*, here the SCAQMD has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established SCAQMD significance thresholds. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. Here again the court upheld the SCAQMD's approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. Thus, the implementation of PR 1430 will not cause a significant unavoidable cumulative impact.

Therefore, there is no potential for significant adverse cumulative or cumulatively considerable impacts to be generated by PR 1430 for any environmental topic.

XVIII. c) Less Than Significant Impact. Based on the foregoing analyses, PR 1430 is not expected to cause adverse effects on human beings for any environmental topic, either directly or indirectly because: 1) the air quality and GHG impacts were determined to be less than the significance thresholds as analyzed in Section III – Air Quality and Greenhouse Gases; 2) the increased demand for energy, water, and solid waste disposal, can be met by utilizing existing services as analyzed in Section VI - Energy, Section IX - Hydrology and Water Quality, and Section XVI – Solid and Hazardous Waste; 3) the hazards and hazardous materials impacts were determined to be less than significant as analyzed in Section VIII – Hazards and Hazardous Materials; 4) the noise impacts were determined to be less than significant as analyzed in Section XII – Noise; and, 5) the transportation and traffic impacts were determined to be less than the significance thresholds as analyzed in Section XVI – Transportation and Traffic. In addition, the analysis concluded that there would be no significant environmental impacts for the remaining environmental impact topic areas: aesthetics, agriculture and forestry resources, biological resources, cultural resources, geology and soils, land use and planning, mineral resources, population and housing, public services, and recreation.

Conclusion

As previously discussed in environmental topics I through XVIII, the proposed project has no potential to cause significant adverse environmental effects. Since no mitigation measures are necessary or required.

APPENDICES

APPENDIX A

PROPOSED RULE 1430 – CONTROL OF EMISSIONS FROM METAL GRINDING OPERATIONS AT METAL FORGING FACILITIES

In order to save space and avoid repetition, please refer to the latest version of Proposed Rule 1430 located elsewhere in the Governing Board Package. The version of Proposed Rule 1430 that was circulated with the Draft EA and released on January 11, 2017 for a 30-day public review and comment period ending on February 10, 2017 was identified as "PR 1430 December 16, 2016."

Original hard copies of the Draft EA, which include the draft version of the proposed rule listed above, can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by contacting Fabian Wesson, Public Advisor at the SCAQMD's Public Information Center by phone at (909) 396-2432 or by email at PICrequests@aqmd.gov.

APPENDIX B

ASSUMPTIONS AND CALCULATIONS

APPENDIX B-1

CalEEMod Files and Assumptions

CalEEMod Files and Assumptions

Scenario 1 - New Building Construction (Summer)

R1430_Press Forge_20161220

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	5.74	1000sqft	0.13	5,736.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

R1430_Press Forge_20161220 - South Coast AQMD Air District, Summer

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 5736 sq ft

Construction Phase - assumptions: 5 days grading (including soil and demolition material hauling), 52 days of building construction, 10 day for each baghouse demo/construction phase

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. Double the unit amount since two baghouses will be installed at the same time (worst case)

Off-road Equipment - default equipment, hp, LF. assume two equipment for each for paving. Each operate 4 hrs

Off-road Equipment - default

Off-road Equipment - default

Off-road Equipment - default

Off-road Equipment - defalut

Off-road Equipment - assumption

Off-road Equipment - assumption

Off-road Equipment - assumptions based on the equipment data (unit amount and hr/day) used in previous EA for R1155, use default hp and LF, assume 8 hr operation time

Trips and VMT - assumptions

Demolition - assume 5000 sq ft of building demo, 4000 sq ft for 4 baghouses and 4000 sq ft for 4 baghouse foundation

Grading - assume 600 cu yard soil import and export

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	52.00
tblConstructionPhase	NumDays	100.00	10.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	5.00	10.00
tblGrading	MaterialExported	0.00	600.00
tblGrading	MaterialImported	0.00	600.00
tblLandUse	BuildingSpaceSquareFeet	5,740.00	5,736.00
tblLandUse	LandUseSquareFeet	5,740.00	5,736.00
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets

tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	18.00	8.00
tblTripsAndVMT	HaulingTripNumber	18.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.4139	12.1369	8.7939	0.0152	0.6442	0.8169	1.4611	0.1152	0.7796	0.8948	0.0000	1,518.0742	1,518.0742	0.2570	0.0000	1,524.4995
2017	1.9692	20.5310	10.3240	0.0373	1.4159	0.9321	2.2025	0.5912	0.8919	1.3414	0.0000	3,895.6656	3,895.6656	0.4172	0.0000	3,906.0956
Maximum	**1.9692**	**20.5310**	**10.3240**	**0.0373**	**1.4159**	**0.9321**	**2.2025**	**0.5912**	**0.8919**	**1.3414**	**0.0000**	**3,895.6656**	**3,895.6656**	**0.4172**	**0.0000**	**3,906.0956**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.4139	12.1369	8.7939	0.0152	0.6442	0.8169	1.4611	0.1152	0.7796	0.8948	0.0000	1,518.0742	1,518.0742	0.2570	0.0000	1,524.4995
2017	1.9692	20.5310	10.3240	0.0373	1.4159	0.9321	2.2025	0.5912	0.8919	1.3414	0.0000	3,895.6656	3,895.6656	0.4172	0.0000	3,906.0956
Maximum	**1.9692**	**20.5310**	**10.3240**	**0.0373**	**1.4159**	**0.9321**	**2.2025**	**0.5912**	**0.8919**	**1.3414**	**0.0000**	**3,895.6656**	**3,895.6656**	**0.4172**	**0.0000**	**3,906.0956**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Energy	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Mobile	0.0291	0.1419	0.4299	1.2000e-003	0.0879	1.5600e-003	0.0895	0.0235	1.4800e-003	0.0250		121.7004	121.7004	6.8600e-003		121.8718
Total	**0.1574**	**0.1433**	**0.4316**	**1.2100e-003**	**0.0879**	**1.6600e-003**	**0.0896**	**0.0235**	**1.5800e-003**	**0.0251**		**123.3101**	**123.3101**	**6.8900e-003**	**3.0000e-005**	**123.4912**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Energy	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Mobile	0.0291	0.1419	0.4299	1.2000e-003	0.0879	1.5600e-003	0.0895	0.0235	1.4800e-003	0.0250		121.7004	121.7004	6.8600e-003		121.8718
Total	**0.1574**	**0.1433**	**0.4316**	**1.2100e-003**	**0.0879**	**1.6600e-003**	**0.0896**	**0.0235**	**1.5800e-003**	**0.0251**		**123.3101**	**123.3101**	**6.8900e-003**	**3.0000e-005**	**123.4912**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/1/2016	12/14/2016	5	10	
2	old baghouse demo	Demolition	12/15/2016	12/28/2016	5	10	
3	old baghouse foundation demo	Demolition	12/29/2016	1/11/2017	5	10	
4	Grading	Grading	1/12/2017	1/18/2017	5	5	
5	Building Construction	Building Construction	1/19/2017	3/31/2017	5	52	
6	building paving	Paving	4/1/2017	4/7/2017	5	5	
7	baghouse pad paving	Paving	4/8/2017	4/21/2017	5	10	
8	baghouse installation	Building Construction	4/22/2017	5/5/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
building paving	Cement and Mortar Mixers	4	6.00	9	0.56
building paving	Pavers	1	7.00	130	0.42

building paving	Rollers	1	7.00	80	0.38
building paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse foundation demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse foundation demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse foundation demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
baghouse pad paving	Cement and Mortar Mixers	2	4.00	9	0.56
baghouse pad paving	Pavers	2	4.00	130	0.42
baghouse pad paving	Rollers	2	4.00	80	0.38
baghouse pad paving	Tractors/Loaders/Backhoes	2	4.00	97	0.37
baghouse installation	Cranes	2	4.00	231	0.29
baghouse installation	Forklifts	2	4.00	89	0.20
baghouse installation	Tractors/Loaders/Backhoes	0	4.00	97	0.37
baghouse installation	Generator Sets	2	4.00	84	0.74
baghouse installation	Welders	2	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
building paving	7	18.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	23.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse demo	4	10.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse foundation demo	4	10.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	150.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	2.00	1.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse pad paving	8	20.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse installation	8	2.00	1.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4922	0.0000	0.4922	0.0745	0.0000	0.0745			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.4922**	**0.8093**	**1.3015**	**0.0745**	**0.7723**	**0.8469**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0279	0.8400	0.1580	1.8600e-003	0.0402	6.6700e-003	0.0469	0.0110	6.3800e-003	0.0174		200.1954	200.1954	0.0144		200.5543
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0962**	**0.8909**	**0.8052**	**3.1600e-003**	**0.1520**	**7.6300e-003**	**0.1596**	**0.0407**	**7.2700e-003**	**0.0479**		**328.9234**	**328.9234**	**0.0197**		**329.4167**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4922	0.0000	0.4922	0.0745	0.0000	0.0745			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.4922**	**0.8093**	**1.3015**	**0.0745**	**0.7723**	**0.8469**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0279	0.8400	0.1580	1.8600e-003	0.0402	6.6700e-003	0.0469	0.0110	6.3800e-003	0.0174		200.1954	200.1954	0.0144		200.5543
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0962**	**0.8909**	**0.8052**	**3.1600e-003**	**0.1520**	**7.6300e-003**	**0.1596**	**0.0407**	**7.2700e-003**	**0.0479**		**328.9234**	**328.9234**	**0.0197**		**329.4167**

3.3 old baghouse demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.3 old baghouse demo - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.7100e-003	0.2922	0.0550	6.5000e-004	0.0140	2.3200e-003	0.0163	3.8300e-003	2.2200e-003	6.0500e-003		69.6332	69.6332	4.9900e-003		69.7580
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0780**	**0.3430**	**0.7022**	**1.9500e-003**	**0.1258**	**3.2800e-003**	**0.1290**	**0.0335**	**3.1100e-003**	**0.0366**		**198.3612**	**198.3612**	**0.0104**		**198.6203**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.3 old baghouse demo - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.7100e-003	0.2922	0.0550	6.5000e-004	0.0140	2.3200e-003	0.0163	3.8300e-003	2.2200e-003	6.0500e-003		69.6332	69.6332	4.9900e-003		69.7580
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0780**	**0.3430**	**0.7022**	**1.9500e-003**	**0.1258**	**3.2800e-003**	**0.1290**	**0.0335**	**3.1100e-003**	**0.0366**		**198.3612**	**198.3612**	**0.0104**		**198.6203**

3.4 old baghouse foundation demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.4 old baghouse foundation demo - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.7100e-003	0.2922	0.0550	6.5000e-004	0.0563	2.3200e-003	0.0586	0.0142	2.2200e-003	0.0164		69.6332	69.6332	4.9900e-003		69.7580
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0780**	**0.3430**	**0.7022**	**1.9500e-003**	**0.1681**	**3.2800e-003**	**0.1714**	**0.0439**	**3.1100e-003**	**0.0470**		**198.3612**	**198.3612**	**0.0104**		**198.6203**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.4 old baghouse foundation demo - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.7100e-003	0.2922	0.0550	6.5000e-004	0.0563	2.3200e-003	0.0586	0.0142	2.2200e-003	0.0164		69.6332	69.6332	4.9900e-003		69.7580
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0780**	**0.3430**	**0.7022**	**1.9500e-003**	**0.1681**	**3.2800e-003**	**0.1714**	**0.0439**	**3.1100e-003**	**0.0470**		**198.3612**	**198.3612**	**0.0104**		**198.6203**

3.4 old baghouse foundation demo - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978		1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.3937**	**0.7318**	**1.1255**	**0.0596**	**0.6978**	**0.7574**		**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.4 old baghouse foundation demo - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0166	1.4400e-003	0.0181	4.4800e-003	1.3700e-003	5.8600e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.0685**	**0.3107**	**0.6189**	**1.9000e-003**	**0.1284**	**2.3600e-003**	**0.1308**	**0.0341**	**2.2200e-003**	**0.0364**		**194.5264**	**194.5264**	**9.5500e-003**		**194.7649**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978	0.0000	1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.3937**	**0.7318**	**1.1255**	**0.0596**	**0.6978**	**0.7574**	**0.0000**	**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.4 old baghouse foundation demo - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0166	1.4400e-003	0.0181	4.4800e-003	1.3700e-003	5.8600e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.0685**	**0.3107**	**0.6189**	**1.9000e-003**	**0.1284**	**2.3600e-003**	**0.1308**	**0.0341**	**2.2200e-003**	**0.0364**		**194.5264**	**194.5264**	**9.5500e-003**		**194.7649**

3.5 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7799	0.0000	0.7799	0.4179	0.0000	0.4179			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978		1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.7799**	**0.7318**	**1.5117**	**0.4179**	**0.6978**	**1.1156**		**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.5 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2989	9.9888	1.8358	0.0241	0.5243	0.0539	0.5782	0.1437	0.0516	0.1952		2,590.9230	2,590.9230	0.1806		2,595.4377
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.3594**	**10.0331**	**2.4058**	**0.0253**	**0.6360**	**0.0548**	**0.6909**	**0.1733**	**0.0524**	**0.2257**		**2,716.3581**	**2,716.3581**	**0.1853**		**2,720.9909**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7799	0.0000	0.7799	0.4179	0.0000	0.4179			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978	0.0000	1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.7799**	**0.7318**	**1.5117**	**0.4179**	**0.6978**	**1.1156**	**0.0000**	**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.5 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2989	9.9888	1.8358	0.0241	0.5243	0.0539	0.5782	0.1437	0.0516	0.1952		2,590.9230	2,590.9230	0.1806		2,595.4377
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.3594**	**10.0331**	**2.4058**	**0.0253**	**0.6360**	**0.0548**	**0.6909**	**0.1733**	**0.0524**	**0.2257**		**2,716.3581**	**2,716.3581**	**0.1853**		**2,720.9909**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2812	12.7589	8.0700	0.0114		0.8591	0.8591		0.7904	0.7904		1,165.9164	1,165.9164	0.3572		1,174.8473
Total	**1.2812**	**12.7589**	**8.0700**	**0.0114**		**0.8591**	**0.8591**		**0.7904**	**0.7904**		**1,165.9164**	**1,165.9164**	**0.3572**		**1,174.8473**

3.6 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9200e-003	0.0640	0.0118	1.5000e-004	3.3600e-003	3.5000e-004	3.7100e-003	9.2000e-004	3.3000e-004	1.2500e-003		16.6085	16.6085	1.1600e-003		16.6374
Vendor	4.8400e-003	0.1291	0.0336	2.6000e-004	6.4000e-003	1.1200e-003	7.5200e-003	1.8400e-003	1.0700e-003	2.9100e-003		27.9446	27.9446	2.0000e-003		27.9946
Worker	0.0121	8.8700e-003	0.1140	2.5000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		25.0870	25.0870	9.5000e-004		25.1107
Total	**0.0189**	**0.2020**	**0.1593**	**6.6000e-004**	**0.0321**	**1.6500e-003**	**0.0338**	**8.6900e-003**	**1.5700e-003**	**0.0103**		**69.6401**	**69.6401**	**4.1100e-003**		**69.7427**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2812	12.7589	8.0700	0.0114		0.8591	0.8591		0.7904	0.7904	0.0000	1,165.9164	1,165.9164	0.3572		1,174.8473
Total	**1.2812**	**12.7589**	**8.0700**	**0.0114**		**0.8591**	**0.8591**		**0.7904**	**0.7904**	**0.0000**	**1,165.9164**	**1,165.9164**	**0.3572**		**1,174.8473**

3.6 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9200e-003	0.0640	0.0118	1.5000e-004	3.3600e-003	3.5000e-004	3.7100e-003	9.2000e-004	3.3000e-004	1.2500e-003		16.6085	16.6085	1.1600e-003		16.6374
Vendor	4.8400e-003	0.1291	0.0336	2.6000e-004	6.4000e-003	1.1200e-003	7.5200e-003	1.8400e-003	1.0700e-003	2.9100e-003		27.9446	27.9446	2.0000e-003		27.9946
Worker	0.0121	8.8700e-003	0.1140	2.5000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		25.0870	25.0870	9.5000e-004		25.1107
Total	**0.0189**	**0.2020**	**0.1593**	**6.6000e-004**	**0.0321**	**1.6500e-003**	**0.0338**	**8.6900e-003**	**1.5700e-003**	**0.0103**		**69.6401**	**69.6401**	**4.1100e-003**		**69.7427**

3.7 building paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636		1,085.1071	1,085.1071	0.3018		1,092.6515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0532**	**9.9754**	**7.3425**	**0.0113**		**0.6087**	**0.6087**		**0.5636**	**0.5636**		**1,085.1071**	**1,085.1071**	**0.3018**		**1,092.6515**

3.7 building paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0140	1.4400e-003	0.0154	3.8300e-003	1.3700e-003	5.2100e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1090	0.0798	1.0259	2.2700e-003	0.2012	1.6600e-003	0.2029	0.0534	1.5300e-003	0.0549		225.7832	225.7832	8.5100e-003		225.9959
Total	**0.1169**	**0.3462**	**1.0748**	**2.9100e-003**	**0.2152**	**3.1000e-003**	**0.2183**	**0.0572**	**2.9000e-003**	**0.0601**		**294.8745**	**294.8745**	**0.0133**		**295.2075**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636	0.0000	1,085.1071	1,085.1071	0.3018		1,092.6515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0532**	**9.9754**	**7.3425**	**0.0113**		**0.6087**	**0.6087**		**0.5636**	**0.5636**	**0.0000**	**1,085.1071**	**1,085.1071**	**0.3018**		**1,092.6515**

3.7 building paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0140	1.4400e-003	0.0154	3.8300e-003	1.3700e-003	5.2100e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1090	0.0798	1.0259	2.2700e-003	0.2012	1.6600e-003	0.2029	0.0534	1.5300e-003	0.0549		225.7832	225.7832	8.5100e-003		225.9959
Total	**0.1169**	**0.3462**	**1.0748**	**2.9100e-003**	**0.2152**	**3.1000e-003**	**0.2183**	**0.0572**	**2.9000e-003**	**0.0601**		**294.8745**	**294.8745**	**0.0133**		**295.2075**

3.8 baghouse pad paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0610	10.5057	7.6425	0.0111		0.6601	0.6601		0.6084	0.6084		1,117.4400	1,117.4400	0.3322		1,125.7437
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0610**	**10.5057**	**7.6425**	**0.0111**		**0.6601**	**0.6601**		**0.6084**	**0.6084**		**1,117.4400**	**1,117.4400**	**0.3322**		**1,125.7437**

3.8 baghouse pad paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0140	1.4400e-003	0.0154	3.8300e-003	1.3700e-003	5.2100e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1211	0.0887	1.1399	2.5200e-003	0.2236	1.8400e-003	0.2254	0.0593	1.7000e-003	0.0610		250.8703	250.8703	9.4500e-003		251.1065
Total	**0.1291**	**0.3550**	**1.1888**	**3.1600e-003**	**0.2375**	**3.2800e-003**	**0.2408**	**0.0631**	**3.0700e-003**	**0.0662**		**319.9615**	**319.9615**	**0.0143**		**320.3182**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0610	10.5057	7.6425	0.0111		0.6601	0.6601		0.6084	0.6084	0.0000	1,117.4400	1,117.4400	0.3322		1,125.7437
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0610**	**10.5057**	**7.6425**	**0.0111**		**0.6601**	**0.6601**		**0.6084**	**0.6084**	**0.0000**	**1,117.4400**	**1,117.4400**	**0.3322**		**1,125.7437**

3.8 baghouse pad paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0140	1.4400e-003	0.0154	3.8300e-003	1.3700e-003	5.2100e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1211	0.0887	1.1399	2.5200e-003	0.2236	1.8400e-003	0.2254	0.0593	1.7000e-003	0.0610		250.8703	250.8703	9.4500e-003		251.1065
Total	**0.1291**	**0.3550**	**1.1888**	**3.1600e-003**	**0.2375**	**3.2800e-003**	**0.2408**	**0.0631**	**3.0700e-003**	**0.0662**		**319.9615**	**319.9615**	**0.0143**		**320.3182**

3.9 baghouse installation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9443	15.8945	9.7526	0.0164		0.9294	0.9294		0.8893	0.8893		1,576.7758	1,576.7758	0.3240		1,584.8756
Total	**1.9443**	**15.8945**	**9.7526**	**0.0164**		**0.9294**	**0.9294**		**0.8893**	**0.8893**		**1,576.7758**	**1,576.7758**	**0.3240**		**1,584.8756**

3.9 baghouse installation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0140	1.4400e-003	0.0154	3.8300e-003	1.3700e-003	5.2100e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	4.8400e-003	0.1291	0.0336	2.6000e-004	6.4000e-003	1.1200e-003	7.5200e-003	1.8400e-003	1.0700e-003	2.9100e-003		27.9446	27.9446	2.0000e-003		27.9946
Worker	0.0121	8.8700e-003	0.1140	2.5000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		25.0870	25.0870	9.5000e-004		25.1107
Total	**0.0249**	**0.4043**	**0.1965**	**1.1500e-003**	**0.0427**	**2.7400e-003**	**0.0455**	**0.0116**	**2.6100e-003**	**0.0142**		**122.1229**	**122.1229**	**7.7700e-003**		**122.3170**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9443	15.8945	9.7526	0.0164		0.9294	0.9294		0.8893	0.8893	0.0000	1,576.7758	1,576.7758	0.3240		1,584.8756
Total	**1.9443**	**15.8945**	**9.7526**	**0.0164**		**0.9294**	**0.9294**		**0.8893**	**0.8893**	**0.0000**	**1,576.7758**	**1,576.7758**	**0.3240**		**1,584.8756**

3.9 baghouse installation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0140	1.4400e-003	0.0154	3.8300e-003	1.3700e-003	5.2100e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	4.8400e-003	0.1291	0.0336	2.6000e-004	6.4000e-003	1.1200e-003	7.5200e-003	1.8400e-003	1.0700e-003	2.9100e-003		27.9446	27.9446	2.0000e-003		27.9946
Worker	0.0121	8.8700e-003	0.1140	2.5000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		25.0870	25.0870	9.5000e-004		25.1107
Total	**0.0249**	**0.4043**	**0.1965**	**1.1500e-003**	**0.0427**	**2.7400e-003**	**0.0455**	**0.0116**	**2.6100e-003**	**0.0142**		**122.1229**	**122.1229**	**7.7700e-003**		**122.3170**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0291	0.1419	0.4299	1.2000e-003	0.0879	1.5600e-003	0.0895	0.0235	1.4800e-003	0.0250		121.7004	121.7004	6.8600e-003		121.8718
Unmitigated	0.0291	0.1419	0.4299	1.2000e-003	0.0879	1.5600e-003	0.0895	0.0235	1.4800e-003	0.0250		121.7004	121.7004	6.8600e-003		121.8718

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	9.64	9.64	9.64	41,328	41,328
Total	9.64	9.64	9.64	41,328	41,328

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
NaturalGas Unmitigated	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	13.6721	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Total		**1.5000e-004**	**1.3400e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6085**	**1.6085**	**3.0000e-005**	**3.0000e-005**	**1.6180**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.0136721	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Total		**1.5000e-004**	**1.3400e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6085**	**1.6085**	**3.0000e-005**	**3.0000e-005**	**1.6180**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Unmitigated	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1136					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Total	**0.1282**	**1.0000e-005**	**6.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2600e-003**	**1.2600e-003**	**0.0000**		**1.3400e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1136					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Total	**0.1282**	**1.0000e-005**	**6.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2600e-003**	**1.2600e-003**	**0.0000**		**1.3400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 1 - New Building Construction (Winter)

R1430_Press Forge_20161220

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	5.74	1000sqft	0.13	5,736.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 5736 sq ft

Construction Phase - assumptions: 5 days grading (including soil and demolition material hauling), 52 days of building construction, 10 day for each baghouse demo/construction phase

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. Double the unit amount since two baghouses will be installed at the same time (worst case)

Off-road Equipment - default equipment, hp, LF. assume two equipment for each for paving. Each operate 4 hrs

Off-road Equipment - default

Off-road Equipment - default

Off-road Equipment - default

Off-road Equipment - defalut

Off-road Equipment - assumption

Off-road Equipment - assumption

Off-road Equipment - assumptions based on the equipment data (unit amount and hr/day) used in previous EA for R1155, use default hp and LF, assume 8 hr operation time

Trips and VMT - assumptions

Demolition - assume 5000 sq ft of building demo, 4000 sq ft for 4 baghouses and 4000 sq ft for 4 baghouse foundation

Grading - assume 600 cu yard soil import and export

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	52.00
tblConstructionPhase	NumDays	100.00	10.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	5.00	10.00
tblGrading	MaterialExported	0.00	600.00
tblGrading	MaterialImported	0.00	600.00
tblLandUse	BuildingSpaceSquareFeet	5,740.00	5,736.00
tblLandUse	LandUseSquareFeet	5,740.00	5,736.00
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets

tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	18.00	8.00
tblTripsAndVMT	HaulingTripNumber	18.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.4205	12.1563	8.7503	0.0150	0.6442	0.8170	1.4612	0.1152	0.7797	0.8949	0.0000	1,506.5296	1,506.5296	0.2574	0.0000	1,512.9636
2017	1.9706	20.6875	10.4264	0.0368	1.4159	0.9322	2.2034	0.5912	0.8920	1.3422	0.0000	3,842.5890	3,842.5890	0.4254	0.0000	3,853.2226
Maximum	**1.9706**	**20.6875**	**10.4264**	**0.0368**	**1.4159**	**0.9322**	**2.2034**	**0.5912**	**0.8920**	**1.3422**	**0.0000**	**3,842.5890**	**3,842.5890**	**0.4254**	**0.0000**	**3,853.2226**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.4205	12.1563	8.7503	0.0150	0.6442	0.8170	1.4612	0.1152	0.7797	0.8949	0.0000	1,506.5296	1,506.5296	0.2574	0.0000	1,512.9636
2017	1.9706	20.6875	10.4264	0.0368	1.4159	0.9322	2.2034	0.5912	0.8920	1.3422	0.0000	3,842.5890	3,842.5890	0.4254	0.0000	3,853.2226
Maximum	**1.9706**	**20.6875**	**10.4264**	**0.0368**	**1.4159**	**0.9322**	**2.2034**	**0.5912**	**0.8920**	**1.3422**	**0.0000**	**3,842.5890**	**3,842.5890**	**0.4254**	**0.0000**	**3,853.2226**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Energy	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Mobile	0.0280	0.1467	0.4006	1.1400e-003	0.0879	1.5700e-003	0.0895	0.0235	1.4800e-003	0.0250		115.2127	115.2127	6.7700e-003		115.3820
Total	**0.1563**	**0.1481**	**0.4023**	**1.1500e-003**	**0.0879**	**1.6700e-003**	**0.0896**	**0.0235**	**1.5800e-003**	**0.0251**		**116.8224**	**116.8224**	**6.8000e-003**	**3.0000e-005**	**117.0014**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Energy	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Mobile	0.0280	0.1467	0.4006	1.1400e-003	0.0879	1.5700e-003	0.0895	0.0235	1.4800e-003	0.0250		115.2127	115.2127	6.7700e-003		115.3820
Total	**0.1563**	**0.1481**	**0.4023**	**1.1500e-003**	**0.0879**	**1.6700e-003**	**0.0896**	**0.0235**	**1.5800e-003**	**0.0251**		**116.8224**	**116.8224**	**6.8000e-003**	**3.0000e-005**	**117.0014**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/1/2016	12/14/2016	5	10	
2	old baghouse demo	Demolition	12/15/2016	12/28/2016	5	10	
3	old baghouse foundation demo	Demolition	12/29/2016	1/11/2017	5	10	
4	Grading	Grading	1/12/2017	1/18/2017	5	5	
5	Building Construction	Building Construction	1/19/2017	3/31/2017	5	52	
6	building paving	Paving	4/1/2017	4/7/2017	5	5	
7	baghouse pad paving	Paving	4/8/2017	4/21/2017	5	10	
8	baghouse installation	Building Construction	4/22/2017	5/5/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
building paving	Cement and Mortar Mixers	4	6.00	9	0.56
building paving	Pavers	1	7.00	130	0.42

building paving	Rollers	1	7.00	80	0.38
building paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse foundation demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse foundation demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse foundation demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
baghouse pad paving	Cement and Mortar Mixers	2	4.00	9	0.56
baghouse pad paving	Pavers	2	4.00	130	0.42
baghouse pad paving	Rollers	2	4.00	80	0.38
baghouse pad paving	Tractors/Loaders/Backhoes	2	4.00	97	0.37
baghouse installation	Cranes	2	4.00	231	0.29
baghouse installation	Forklifts	2	4.00	89	0.20
baghouse installation	Tractors/Loaders/Backhoes	0	4.00	97	0.37
baghouse installation	Generator Sets	2	4.00	84	0.74
baghouse installation	Welders	2	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
building paving	7	18.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	23.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse demo	4	10.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse foundation demo	4	10.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	150.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	2.00	1.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse pad paving	8	20.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse installation	8	2.00	1.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4922	0.0000	0.4922	0.0745	0.0000	0.0745			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.4922**	**0.8093**	**1.3015**	**0.0745**	**0.7723**	**0.8469**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0286	0.8545	0.1706	1.8300e-003	0.0402	6.7500e-003	0.0470	0.0110	6.4600e-003	0.0175		196.9042	196.9042	0.0150		197.2798
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.1028**	**0.9102**	**0.7616**	**3.0400e-003**	**0.1520**	**7.7100e-003**	**0.1597**	**0.0407**	**7.3500e-003**	**0.0480**		**317.3788**	**317.3788**	**0.0201**		**317.8808**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4922	0.0000	0.4922	0.0745	0.0000	0.0745			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.4922**	**0.8093**	**1.3015**	**0.0745**	**0.7723**	**0.8469**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0286	0.8545	0.1706	1.8300e-003	0.0402	6.7500e-003	0.0470	0.0110	6.4600e-003	0.0175		196.9042	196.9042	0.0150		197.2798
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.1028**	**0.9102**	**0.7616**	**3.0400e-003**	**0.1520**	**7.7100e-003**	**0.1597**	**0.0407**	**7.3500e-003**	**0.0480**		**317.3788**	**317.3788**	**0.0201**		**317.8808**

3.3 old baghouse demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.3 old baghouse demo - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9500e-003	0.2972	0.0593	6.4000e-004	0.0140	2.3500e-003	0.0163	3.8300e-003	2.2500e-003	6.0800e-003		68.4884	68.4884	5.2300e-003		68.6191
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0842**	**0.3529**	**0.6504**	**1.8500e-003**	**0.1258**	**3.3100e-003**	**0.1291**	**0.0335**	**3.1400e-003**	**0.0366**		**188.9630**	**188.9630**	**0.0103**		**189.2201**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.3 old baghouse demo - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9500e-003	0.2972	0.0593	6.4000e-004	0.0140	2.3500e-003	0.0163	3.8300e-003	2.2500e-003	6.0800e-003		68.4884	68.4884	5.2300e-003		68.6191
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0842**	**0.3529**	**0.6504**	**1.8500e-003**	**0.1258**	**3.3100e-003**	**0.1291**	**0.0335**	**3.1400e-003**	**0.0366**		**188.9630**	**188.9630**	**0.0103**		**189.2201**

3.4 old baghouse foundation demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.4 old baghouse foundation demo - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9500e-003	0.2972	0.0593	6.4000e-004	0.0563	2.3500e-003	0.0586	0.0142	2.2500e-003	0.0165		68.4884	68.4884	5.2300e-003		68.6191
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0842**	**0.3529**	**0.6504**	**1.8500e-003**	**0.1681**	**3.3100e-003**	**0.1714**	**0.0439**	**3.1400e-003**	**0.0470**		**188.9630**	**188.9630**	**0.0103**		**189.2201**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.4 old baghouse foundation demo - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9500e-003	0.2972	0.0593	6.4000e-004	0.0563	2.3500e-003	0.0586	0.0142	2.2500e-003	0.0165		68.4884	68.4884	5.2300e-003		68.6191
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0842**	**0.3529**	**0.6504**	**1.8500e-003**	**0.1681**	**3.3100e-003**	**0.1714**	**0.0439**	**3.1400e-003**	**0.0470**		**188.9630**	**188.9630**	**0.0103**		**189.2201**

3.4 old baghouse foundation demo - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978		1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.3937**	**0.7318**	**1.1255**	**0.0596**	**0.6978**	**0.7574**		**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.4 old baghouse foundation demo - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0166	1.4600e-003	0.0181	4.4800e-003	1.4000e-003	5.8800e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.0740**	**0.3190**	**0.5714**	**1.8100e-003**	**0.1284**	**2.3800e-003**	**0.1308**	**0.0341**	**2.2500e-003**	**0.0364**		**185.2559**	**185.2559**	**9.4800e-003**		**185.4928**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978	0.0000	1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.3937**	**0.7318**	**1.1255**	**0.0596**	**0.6978**	**0.7574**	**0.0000**	**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.4 old baghouse foundation demo - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0166	1.4600e-003	0.0181	4.4800e-003	1.4000e-003	5.8800e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.0740**	**0.3190**	**0.5714**	**1.8100e-003**	**0.1284**	**2.3800e-003**	**0.1308**	**0.0341**	**2.2500e-003**	**0.0364**		**185.2559**	**185.2559**	**9.4800e-003**		**185.4928**

3.5 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7799	0.0000	0.7799	0.4179	0.0000	0.4179			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978		1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.7799**	**0.7318**	**1.5117**	**0.4179**	**0.6978**	**1.1156**		**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.5 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3072	10.1411	1.9898	0.0237	0.5243	0.0547	0.5790	0.1437	0.0524	0.1961		2,545.9168	2,545.9168	0.1890		2,550.6422
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.3729**	**10.1897**	**2.5081**	**0.0248**	**0.6360**	**0.0557**	**0.6917**	**0.1733**	**0.0532**	**0.2265**		**2,663.2816**	**2,663.2816**	**0.1935**		**2,668.1179**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7799	0.0000	0.7799	0.4179	0.0000	0.4179			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978	0.0000	1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.7799**	**0.7318**	**1.5117**	**0.4179**	**0.6978**	**1.1156**	**0.0000**	**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.5 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3072	10.1411	1.9898	0.0237	0.5243	0.0547	0.5790	0.1437	0.0524	0.1961		2,545.9168	2,545.9168	0.1890		2,550.6422
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.3729**	**10.1897**	**2.5081**	**0.0248**	**0.6360**	**0.0557**	**0.6917**	**0.1733**	**0.0532**	**0.2265**		**2,663.2816**	**2,663.2816**	**0.1935**		**2,668.1179**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2812	12.7589	8.0700	0.0114		0.8591	0.8591		0.7904	0.7904		1,165.9164	1,165.9164	0.3572		1,174.8473
Total	**1.2812**	**12.7589**	**8.0700**	**0.0114**		**0.8591**	**0.8591**		**0.7904**	**0.7904**		**1,165.9164**	**1,165.9164**	**0.3572**		**1,174.8473**

3.6 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9700e-003	0.0650	0.0128	1.5000e-004	3.3600e-003	3.5000e-004	3.7100e-003	9.2000e-004	3.4000e-004	1.2600e-003		16.3200	16.3200	1.2100e-003		16.3503
Vendor	5.0400e-003	0.1295	0.0371	2.6000e-004	6.4000e-003	1.1300e-003	7.5300e-003	1.8400e-003	1.0800e-003	2.9300e-003		27.1731	27.1731	2.1500e-003		27.2268
Worker	0.0132	9.7200e-003	0.1037	2.4000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		23.4730	23.4730	8.9000e-004		23.4951
Total	**0.0202**	**0.2042**	**0.1535**	**6.5000e-004**	**0.0321**	**1.6600e-003**	**0.0338**	**8.6900e-003**	**1.5900e-003**	**0.0103**		**66.9660**	**66.9660**	**4.2500e-003**		**67.0722**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2812	12.7589	8.0700	0.0114		0.8591	0.8591		0.7904	0.7904	0.0000	1,165.9164	1,165.9164	0.3572		1,174.8473
Total	**1.2812**	**12.7589**	**8.0700**	**0.0114**		**0.8591**	**0.8591**		**0.7904**	**0.7904**	**0.0000**	**1,165.9164**	**1,165.9164**	**0.3572**		**1,174.8473**

3.6 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9700e-003	0.0650	0.0128	1.5000e-004	3.3600e-003	3.5000e-004	3.7100e-003	9.2000e-004	3.4000e-004	1.2600e-003		16.3200	16.3200	1.2100e-003		16.3503
Vendor	5.0400e-003	0.1295	0.0371	2.6000e-004	6.4000e-003	1.1300e-003	7.5300e-003	1.8400e-003	1.0800e-003	2.9300e-003		27.1731	27.1731	2.1500e-003		27.2268
Worker	0.0132	9.7200e-003	0.1037	2.4000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		23.4730	23.4730	8.9000e-004		23.4951
Total	**0.0202**	**0.2042**	**0.1535**	**6.5000e-004**	**0.0321**	**1.6600e-003**	**0.0338**	**8.6900e-003**	**1.5900e-003**	**0.0103**		**66.9660**	**66.9660**	**4.2500e-003**		**67.0722**

3.7 building paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636		1,085.1071	1,085.1071	0.3018		1,092.6515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0532**	**9.9754**	**7.3425**	**0.0113**		**0.6087**	**0.6087**		**0.5636**	**0.5636**		**1,085.1071**	**1,085.1071**	**0.3018**		**1,092.6515**

3.7 building paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0140	1.4600e-003	0.0154	3.8300e-003	1.4000e-003	5.2300e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1184	0.0875	0.9330	2.1200e-003	0.2012	1.6600e-003	0.2029	0.0534	1.5300e-003	0.0549		211.2566	211.2566	7.9900e-003		211.4563
Total	**0.1266**	**0.3579**	**0.9860**	**2.7500e-003**	**0.2152**	**3.1200e-003**	**0.2183**	**0.0572**	**2.9300e-003**	**0.0601**		**279.1477**	**279.1477**	**0.0130**		**279.4734**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636	0.0000	1,085.1071	1,085.1071	0.3018		1,092.6515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0532**	**9.9754**	**7.3425**	**0.0113**		**0.6087**	**0.6087**		**0.5636**	**0.5636**	**0.0000**	**1,085.1071**	**1,085.1071**	**0.3018**		**1,092.6515**

3.7 building paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0140	1.4600e-003	0.0154	3.8300e-003	1.4000e-003	5.2300e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1184	0.0875	0.9330	2.1200e-003	0.2012	1.6600e-003	0.2029	0.0534	1.5300e-003	0.0549		211.2566	211.2566	7.9900e-003		211.4563
Total	**0.1266**	**0.3579**	**0.9860**	**2.7500e-003**	**0.2152**	**3.1200e-003**	**0.2183**	**0.0572**	**2.9300e-003**	**0.0601**		**279.1477**	**279.1477**	**0.0130**		**279.4734**

3.8 baghouse pad paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0610	10.5057	7.6425	0.0111		0.6601	0.6601		0.6084	0.6084		1,117.4400	1,117.4400	0.3322		1,125.7437
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0610**	**10.5057**	**7.6425**	**0.0111**		**0.6601**	**0.6601**		**0.6084**	**0.6084**		**1,117.4400**	**1,117.4400**	**0.3322**		**1,125.7437**

3.8 baghouse pad paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0140	1.4600e-003	0.0154	3.8300e-003	1.4000e-003	5.2300e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1316	0.0972	1.0367	2.3600e-003	0.2236	1.8400e-003	0.2254	0.0593	1.7000e-003	0.0610		234.7296	234.7296	8.8800e-003		234.9514
Total	**0.1398**	**0.3676**	**1.0897**	**2.9900e-003**	**0.2375**	**3.3000e-003**	**0.2408**	**0.0631**	**3.1000e-003**	**0.0662**		**302.6207**	**302.6207**	**0.0139**		**302.9686**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0610	10.5057	7.6425	0.0111		0.6601	0.6601		0.6084	0.6084	0.0000	1,117.4400	1,117.4400	0.3322		1,125.7437
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0610**	**10.5057**	**7.6425**	**0.0111**		**0.6601**	**0.6601**		**0.6084**	**0.6084**	**0.0000**	**1,117.4400**	**1,117.4400**	**0.3322**		**1,125.7437**

3.8 baghouse pad paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0140	1.4600e-003	0.0154	3.8300e-003	1.4000e-003	5.2300e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1316	0.0972	1.0367	2.3600e-003	0.2236	1.8400e-003	0.2254	0.0593	1.7000e-003	0.0610		234.7296	234.7296	8.8800e-003		234.9514
Total	**0.1398**	**0.3676**	**1.0897**	**2.9900e-003**	**0.2375**	**3.3000e-003**	**0.2408**	**0.0631**	**3.1000e-003**	**0.0662**		**302.6207**	**302.6207**	**0.0139**		**302.9686**

3.9 baghouse installation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9443	15.8945	9.7526	0.0164		0.9294	0.9294		0.8893	0.8893		1,576.7758	1,576.7758	0.3240		1,584.8756
Total	**1.9443**	**15.8945**	**9.7526**	**0.0164**		**0.9294**	**0.9294**		**0.8893**	**0.8893**		**1,576.7758**	**1,576.7758**	**0.3240**		**1,584.8756**

3.9 baghouse installation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0140	1.4600e-003	0.0154	3.8300e-003	1.4000e-003	5.2300e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	5.0400e-003	0.1295	0.0371	2.6000e-004	6.4000e-003	1.1300e-003	7.5300e-003	1.8400e-003	1.0800e-003	2.9300e-003		27.1731	27.1731	2.1500e-003		27.2268
Worker	0.0132	9.7200e-003	0.1037	2.4000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		23.4730	23.4730	8.9000e-004		23.4951
Total	**0.0264**	**0.4096**	**0.1938**	**1.1300e-003**	**0.0427**	**2.7700e-003**	**0.0455**	**0.0116**	**2.6500e-003**	**0.0143**		**118.5371**	**118.5371**	**8.0800e-003**		**118.7390**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9443	15.8945	9.7526	0.0164		0.9294	0.9294		0.8893	0.8893	0.0000	1,576.7758	1,576.7758	0.3240		1,584.8756
Total	**1.9443**	**15.8945**	**9.7526**	**0.0164**		**0.9294**	**0.9294**		**0.8893**	**0.8893**	**0.0000**	**1,576.7758**	**1,576.7758**	**0.3240**		**1,584.8756**

3.9 baghouse installation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0140	1.4600e-003	0.0154	3.8300e-003	1.4000e-003	5.2300e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	5.0400e-003	0.1295	0.0371	2.6000e-004	6.4000e-003	1.1300e-003	7.5300e-003	1.8400e-003	1.0800e-003	2.9300e-003		27.1731	27.1731	2.1500e-003		27.2268
Worker	0.0132	9.7200e-003	0.1037	2.4000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		23.4730	23.4730	8.9000e-004		23.4951
Total	**0.0264**	**0.4096**	**0.1938**	**1.1300e-003**	**0.0427**	**2.7700e-003**	**0.0455**	**0.0116**	**2.6500e-003**	**0.0143**		**118.5371**	**118.5371**	**8.0800e-003**		**118.7390**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0280	0.1467	0.4006	1.1400e-003	0.0879	1.5700e-003	0.0895	0.0235	1.4800e-003	0.0250		115.2127	115.2127	6.7700e-003		115.3820
Unmitigated	0.0280	0.1467	0.4006	1.1400e-003	0.0879	1.5700e-003	0.0895	0.0235	1.4800e-003	0.0250		115.2127	115.2127	6.7700e-003		115.3820

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	9.64	9.64	9.64	41,328	41,328
Total	9.64	9.64	9.64	41,328	41,328

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
NaturalGas Unmitigated	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	13.6721	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Total		**1.5000e-004**	**1.3400e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6085**	**1.6085**	**3.0000e-005**	**3.0000e-005**	**1.6180**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.0136721	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Total		**1.5000e-004**	**1.3400e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6085**	**1.6085**	**3.0000e-005**	**3.0000e-005**	**1.6180**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Unmitigated	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1136					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Total	**0.1282**	**1.0000e-005**	**6.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2600e-003**	**1.2600e-003**	**0.0000**		**1.3400e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1136					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Total	**0.1282**	**1.0000e-005**	**6.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2600e-003**	**1.2600e-003**	**0.0000**		**1.3400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 1 - New Building Construction (Annual)

R1430_Press Forge_20161220

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	5.74	1000sqft	0.13	5,736.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 5736 sq ft

Construction Phase - assumptions: 5 days grading (including soil and demolition material hauling), 52 days of building construction, 10 day for each baghouse demo/construction phase

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. Double the unit amount since two baghouses will be installed at the same time (worst case)

Off-road Equipment - default equipment, hp, LF. assume two equipment for each for paving. Each operate 4 hrs

Off-road Equipment - default

Off-road Equipment - default

Off-road Equipment - default

Off-road Equipment - defalut

Off-road Equipment - assumption

Off-road Equipment - assumption

Off-road Equipment - assumptions based on the equipment data (unit amount and hr/day) used in previous EA for R1155, use default hp and LF, assume 8 hr operation time

Trips and VMT - assumptions

Demolition - assume 5000 sq ft of building demo, 4000 sq ft for 4 baghouses and 4000 sq ft for 4 baghouse foundation

Grading - assume 600 cu yard soil import and export

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	52.00
tblConstructionPhase	NumDays	100.00	10.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	5.00	10.00
tblGrading	MaterialExported	0.00	600.00
tblGrading	MaterialImported	0.00	600.00
tblLandUse	BuildingSpaceSquareFeet	5,740.00	5,736.00
tblLandUse	LandUseSquareFeet	5,740.00	5,736.00
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets

tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	18.00	8.00
tblTripsAndVMT	HaulingTripNumber	18.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.0154	0.1305	0.0957	1.6000e-004	6.3500e-003	8.9600e-003	0.0153	1.1400e-003	8.5500e-003	9.6900e-003	0.0000	14.3674	14.3674	2.5100e-003	0.0000	14.4303
2017	0.0616	0.5944	0.3881	6.5000e-004	8.3200e-003	0.0368	0.0451	2.5700e-003	0.0342	0.0368	0.0000	60.1070	60.1070	0.0141	0.0000	60.4605
Maximum	**0.0616**	**0.5944**	**0.3881**	**6.5000e-004**	**8.3200e-003**	**0.0368**	**0.0451**	**2.5700e-003**	**0.0342**	**0.0368**	**0.0000**	**60.1070**	**60.1070**	**0.0141**	**0.0000**	**60.4605**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.0154	0.1305	0.0957	1.6000e-004	6.3500e-003	8.9600e-003	0.0153	1.1400e-003	8.5500e-003	9.6900e-003	0.0000	14.3674	14.3674	2.5100e-003	0.0000	14.4303
2017	0.0616	0.5944	0.3881	6.5000e-004	8.3200e-003	0.0368	0.0451	2.5700e-003	0.0342	0.0368	0.0000	60.1069	60.1069	0.0141	0.0000	60.4605
Maximum	**0.0616**	**0.5944**	**0.3881**	**6.5000e-004**	**8.3200e-003**	**0.0368**	**0.0451**	**2.5700e-003**	**0.0342**	**0.0368**	**0.0000**	**60.1069**	**60.1069**	**0.0141**	**0.0000**	**60.4605**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	12-1-2016	2-28-2017	0.3324	0.3324
2	3-1-2017	5-31-2017	0.2469	0.2469
		Highest	0.3324	0.3324

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0234	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Energy	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	7.5402	7.5402	3.1000e-004	7.0000e-005	7.5678
Mobile	4.9900e-003	0.0272	0.0742	2.1000e-004	0.0157	2.8000e-004	0.0160	4.2100e-003	2.7000e-004	4.4800e-003	0.0000	19.2889	19.2889	1.1200e-003	0.0000	19.3168
Waste						0.0000	0.0000		0.0000	0.0000	1.0962	0.0000	1.0962	0.0648	0.0000	2.7157
Water						0.0000	0.0000		0.0000	0.0000	0.4211	5.5070	5.9281	0.0435	1.0700e-003	7.3335
Total	**0.0284**	**0.0274**	**0.0745**	**2.1000e-004**	**0.0157**	**3.0000e-004**	**0.0160**	**4.2100e-003**	**2.9000e-004**	**4.5000e-003**	**1.5173**	**32.3362**	**33.8535**	**0.1097**	**1.1400e-003**	**36.9339**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0234	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Energy	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	7.5402	7.5402	3.1000e-004	7.0000e-005	7.5678
Mobile	4.9900e-003	0.0272	0.0742	2.1000e-004	0.0157	2.8000e-004	0.0160	4.2100e-003	2.7000e-004	4.4800e-003	0.0000	19.2889	19.2889	1.1200e-003	0.0000	19.3168
Waste						0.0000	0.0000		0.0000	0.0000	1.0962	0.0000	1.0962	0.0648	0.0000	2.7157
Water						0.0000	0.0000		0.0000	0.0000	0.4211	5.5070	5.9281	0.0435	1.0700e-003	7.3335
Total	**0.0284**	**0.0274**	**0.0745**	**2.1000e-004**	**0.0157**	**3.0000e-004**	**0.0160**	**4.2100e-003**	**2.9000e-004**	**4.5000e-003**	**1.5173**	**32.3362**	**33.8535**	**0.1097**	**1.1400e-003**	**36.9339**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/1/2016	12/14/2016	5	10	
2	old baghouse demo	Demolition	12/15/2016	12/28/2016	5	10	
3	old baghouse foundation demo	Demolition	12/29/2016	1/11/2017	5	10	
4	Grading	Grading	1/12/2017	1/18/2017	5	5	
5	Building Construction	Building Construction	1/19/2017	3/31/2017	5	52	
6	building paving	Paving	4/1/2017	4/7/2017	5	5	
7	baghouse pad paving	Paving	4/8/2017	4/21/2017	5	10	
8	baghouse installation	Building Construction	4/22/2017	5/5/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
building paving	Cement and Mortar Mixers	4	6.00	9	0.56
building paving	Pavers	1	7.00	130	0.42
building paving	Rollers	1	7.00	80	0.38
building paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse demo	Concrete/Industrial Saws	1	8.00	81	0.73

old baghouse demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse foundation demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse foundation demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse foundation demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
baghouse pad paving	Cement and Mortar Mixers	2	4.00	9	0.56
baghouse pad paving	Pavers	2	4.00	130	0.42
baghouse pad paving	Rollers	2	4.00	80	0.38
baghouse pad paving	Tractors/Loaders/Backhoes	2	4.00	97	0.37
baghouse installation	Cranes	2	4.00	231	0.29
baghouse installation	Forklifts	2	4.00	89	0.20
baghouse installation	Tractors/Loaders/Backhoes	0	4.00	97	0.37
baghouse installation	Generator Sets	2	4.00	84	0.74
baghouse installation	Welders	2	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
building paving	7	18.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	23.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse demo	4	10.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse foundation demo	4	10.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	150.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	2.00	1.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse pad paving	8	20.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse installation	8	2.00	1.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4600e-003	0.0000	2.4600e-003	3.7000e-004	0.0000	3.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5900e-003	0.0562	0.0399	6.0000e-005		4.0500e-003	4.0500e-003		3.8600e-003	3.8600e-003	0.0000	5.3939	5.3939	1.0800e-003	0.0000	5.4208
Total	**6.5900e-003**	**0.0562**	**0.0399**	**6.0000e-005**	**2.4600e-003**	**4.0500e-003**	**6.5100e-003**	**3.7000e-004**	**3.8600e-003**	**4.2300e-003**	**0.0000**	**5.3939**	**5.3939**	**1.0800e-003**	**0.0000**	**5.4208**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4000e-004	4.3500e-003	8.2000e-004	1.0000e-005	2.0000e-004	3.0000e-005	2.3000e-004	5.0000e-005	3.0000e-005	9.0000e-005	0.0000	0.9018	0.9018	7.0000e-005	0.0000	0.9035
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.9000e-004	3.0300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5558	0.5558	2.0000e-005	0.0000	0.5563
Total	**4.8000e-004**	**4.6400e-003**	**3.8500e-003**	**2.0000e-005**	**7.5000e-004**	**3.0000e-005**	**7.8000e-004**	**2.0000e-004**	**3.0000e-005**	**2.4000e-004**	**0.0000**	**1.4576**	**1.4576**	**9.0000e-005**	**0.0000**	**1.4598**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4600e-003	0.0000	2.4600e-003	3.7000e-004	0.0000	3.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5900e-003	0.0562	0.0399	6.0000e-005		4.0500e-003	4.0500e-003		3.8600e-003	3.8600e-003	0.0000	5.3939	5.3939	1.0800e-003	0.0000	5.4208
Total	**6.5900e-003**	**0.0562**	**0.0399**	**6.0000e-005**	**2.4600e-003**	**4.0500e-003**	**6.5100e-003**	**3.7000e-004**	**3.8600e-003**	**4.2300e-003**	**0.0000**	**5.3939**	**5.3939**	**1.0800e-003**	**0.0000**	**5.4208**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4000e-004	4.3500e-003	8.2000e-004	1.0000e-005	2.0000e-004	3.0000e-005	2.3000e-004	5.0000e-005	3.0000e-005	9.0000e-005	0.0000	0.9018	0.9018	7.0000e-005	0.0000	0.9035
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.9000e-004	3.0300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5558	0.5558	2.0000e-005	0.0000	0.5563
Total	**4.8000e-004**	**4.6400e-003**	**3.8500e-003**	**2.0000e-005**	**7.5000e-004**	**3.0000e-005**	**7.8000e-004**	**2.0000e-004**	**3.0000e-005**	**2.4000e-004**	**0.0000**	**1.4576**	**1.4576**	**9.0000e-005**	**0.0000**	**1.4598**

3.3 old baghouse demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.9700e-003	0.0000	1.9700e-003	3.0000e-004	0.0000	3.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5900e-003	0.0562	0.0399	6.0000e-005		4.0500e-003	4.0500e-003		3.8600e-003	3.8600e-003	0.0000	5.3939	5.3939	1.0800e-003	0.0000	5.4208
Total	**6.5900e-003**	**0.0562**	**0.0399**	**6.0000e-005**	**1.9700e-003**	**4.0500e-003**	**6.0200e-003**	**3.0000e-004**	**3.8600e-003**	**4.1600e-003**	**0.0000**	**5.3939**	**5.3939**	**1.0800e-003**	**0.0000**	**5.4208**

3.3 old baghouse demo - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	1.5100e-003	2.8000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3137	0.3137	2.0000e-005	0.0000	0.3143
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.9000e-004	3.0300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5558	0.5558	2.0000e-005	0.0000	0.5563
Total	**3.9000e-004**	**1.8000e-003**	**3.3100e-003**	**1.0000e-005**	**6.2000e-004**	**1.0000e-005**	**6.3000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.8694**	**0.8694**	**4.0000e-005**	**0.0000**	**0.8706**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.9700e-003	0.0000	1.9700e-003	3.0000e-004	0.0000	3.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5900e-003	0.0562	0.0399	6.0000e-005		4.0500e-003	4.0500e-003		3.8600e-003	3.8600e-003	0.0000	5.3939	5.3939	1.0800e-003	0.0000	5.4208
Total	**6.5900e-003**	**0.0562**	**0.0399**	**6.0000e-005**	**1.9700e-003**	**4.0500e-003**	**6.0200e-003**	**3.0000e-004**	**3.8600e-003**	**4.1600e-003**	**0.0000**	**5.3939**	**5.3939**	**1.0800e-003**	**0.0000**	**5.4208**

3.3 old baghouse demo - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	1.5100e-003	2.8000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3137	0.3137	2.0000e-005	0.0000	0.3143
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.9000e-004	3.0300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5558	0.5558	2.0000e-005	0.0000	0.5563
Total	**3.9000e-004**	**1.8000e-003**	**3.3100e-003**	**1.0000e-005**	**6.2000e-004**	**1.0000e-005**	**6.3000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.8694**	**0.8694**	**4.0000e-005**	**0.0000**	**0.8706**

3.4 old baghouse foundation demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.9000e-004	0.0000	3.9000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3200e-003	0.0113	7.9900e-003	1.0000e-005		8.1000e-004	8.1000e-004		7.7000e-004	7.7000e-004	0.0000	1.0788	1.0788	2.2000e-004	0.0000	1.0842
Total	**1.3200e-003**	**0.0113**	**7.9900e-003**	**1.0000e-005**	**3.9000e-004**	**8.1000e-004**	**1.2000e-003**	**6.0000e-005**	**7.7000e-004**	**8.3000e-004**	**0.0000**	**1.0788**	**1.0788**	**2.2000e-004**	**0.0000**	**1.0842**

3.4 old baghouse foundation demo - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.0000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0627	0.0627	0.0000	0.0000	0.0629
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	6.0000e-005	6.1000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1112	0.1112	0.0000	0.0000	0.1113
Total	**8.0000e-005**	**3.6000e-004**	**6.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1739**	**0.1739**	**0.0000**	**0.0000**	**0.1741**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.9000e-004	0.0000	3.9000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3200e-003	0.0113	7.9900e-003	1.0000e-005		8.1000e-004	8.1000e-004		7.7000e-004	7.7000e-004	0.0000	1.0788	1.0788	2.2000e-004	0.0000	1.0842
Total	**1.3200e-003**	**0.0113**	**7.9900e-003**	**1.0000e-005**	**3.9000e-004**	**8.1000e-004**	**1.2000e-003**	**6.0000e-005**	**7.7000e-004**	**8.3000e-004**	**0.0000**	**1.0788**	**1.0788**	**2.2000e-004**	**0.0000**	**1.0842**

3.4 old baghouse foundation demo - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.0000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0627	0.0627	0.0000	0.0000	0.0629
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	6.0000e-005	6.1000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1112	0.1112	0.0000	0.0000	0.1113
Total	**8.0000e-005**	**3.6000e-004**	**6.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1739**	**0.1739**	**0.0000**	**0.0000**	**0.1741**

3.4 old baghouse foundation demo - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5700e-003	0.0000	1.5700e-003	2.4000e-004	0.0000	2.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8400e-003	0.0420	0.0317	5.0000e-005		2.9300e-003	2.9300e-003		2.7900e-003	2.7900e-003	0.0000	4.2794	4.2794	8.4000e-004	0.0000	4.3004
Total	**4.8400e-003**	**0.0420**	**0.0317**	**5.0000e-005**	**1.5700e-003**	**2.9300e-003**	**4.5000e-003**	**2.4000e-004**	**2.7900e-003**	**3.0300e-003**	**0.0000**	**4.2794**	**4.2794**	**8.4000e-004**	**0.0000**	**4.3004**

3.4 old baghouse foundation demo - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.1000e-003	2.0000e-004	0.0000	7.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2489	0.2489	2.0000e-005	0.0000	0.2493
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	2.0000e-004	2.1300e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4332	0.4332	2.0000e-005	0.0000	0.4336
Total	**2.7000e-004**	**1.3000e-003**	**2.3300e-003**	**0.0000**	**5.1000e-004**	**1.0000e-005**	**5.1000e-004**	**1.4000e-004**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**0.6820**	**0.6820**	**4.0000e-005**	**0.0000**	**0.6829**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5700e-003	0.0000	1.5700e-003	2.4000e-004	0.0000	2.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8400e-003	0.0420	0.0317	5.0000e-005		2.9300e-003	2.9300e-003		2.7900e-003	2.7900e-003	0.0000	4.2794	4.2794	8.4000e-004	0.0000	4.3004
Total	**4.8400e-003**	**0.0420**	**0.0317**	**5.0000e-005**	**1.5700e-003**	**2.9300e-003**	**4.5000e-003**	**2.4000e-004**	**2.7900e-003**	**3.0300e-003**	**0.0000**	**4.2794**	**4.2794**	**8.4000e-004**	**0.0000**	**4.3004**

3.4 old baghouse foundation demo - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.1000e-003	2.0000e-004	0.0000	7.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2489	0.2489	2.0000e-005	0.0000	0.2493
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	2.0000e-004	2.1300e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4332	0.4332	2.0000e-005	0.0000	0.4336
Total	**2.7000e-004**	**1.3000e-003**	**2.3300e-003**	**0.0000**	**5.1000e-004**	**1.0000e-005**	**5.1000e-004**	**1.4000e-004**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**0.6820**	**0.6820**	**4.0000e-005**	**0.0000**	**0.6829**

3.5 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.9500e-003	0.0000	1.9500e-003	1.0400e-003	0.0000	1.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0200e-003	0.0262	0.0198	3.0000e-005		1.8300e-003	1.8300e-003		1.7400e-003	1.7400e-003	0.0000	2.6746	2.6746	5.3000e-004	0.0000	2.6878
Total	**3.0200e-003**	**0.0262**	**0.0198**	**3.0000e-005**	**1.9500e-003**	**1.8300e-003**	**3.7800e-003**	**1.0400e-003**	**1.7400e-003**	**2.7800e-003**	**0.0000**	**2.6746**	**2.6746**	**5.3000e-004**	**0.0000**	**2.6878**

3.5 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.6000e-004	0.0258	4.7600e-003	6.0000e-005	1.2900e-003	1.4000e-004	1.4300e-003	3.5000e-004	1.3000e-004	4.8000e-004	0.0000	5.8332	5.8332	4.2000e-004	0.0000	5.8437
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.2000e-004	1.3300e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2707	0.2707	1.0000e-005	0.0000	0.2710
Total	**9.1000e-004**	**0.0259**	**6.0900e-003**	**6.0000e-005**	**1.5600e-003**	**1.4000e-004**	**1.7100e-003**	**4.2000e-004**	**1.3000e-004**	**5.5000e-004**	**0.0000**	**6.1040**	**6.1040**	**4.3000e-004**	**0.0000**	**6.1147**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.9500e-003	0.0000	1.9500e-003	1.0400e-003	0.0000	1.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0200e-003	0.0262	0.0198	3.0000e-005		1.8300e-003	1.8300e-003		1.7400e-003	1.7400e-003	0.0000	2.6746	2.6746	5.3000e-004	0.0000	2.6878
Total	**3.0200e-003**	**0.0262**	**0.0198**	**3.0000e-005**	**1.9500e-003**	**1.8300e-003**	**3.7800e-003**	**1.0400e-003**	**1.7400e-003**	**2.7800e-003**	**0.0000**	**2.6746**	**2.6746**	**5.3000e-004**	**0.0000**	**2.6878**

3.5 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.6000e-004	0.0258	4.7600e-003	6.0000e-005	1.2900e-003	1.4000e-004	1.4300e-003	3.5000e-004	1.3000e-004	4.8000e-004	0.0000	5.8332	5.8332	4.2000e-004	0.0000	5.8437
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.2000e-004	1.3300e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2707	0.2707	1.0000e-005	0.0000	0.2710
Total	**9.1000e-004**	**0.0259**	**6.0900e-003**	**6.0000e-005**	**1.5600e-003**	**1.4000e-004**	**1.7100e-003**	**4.2000e-004**	**1.3000e-004**	**5.5000e-004**	**0.0000**	**6.1040**	**6.1040**	**4.3000e-004**	**0.0000**	**6.1147**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0333	0.3317	0.2098	3.0000e-004		0.0223	0.0223		0.0206	0.0206	0.0000	27.5002	27.5002	8.4300e-003	0.0000	27.7109
Total	**0.0333**	**0.3317**	**0.2098**	**3.0000e-004**		**0.0223**	**0.0223**		**0.0206**	**0.0206**	**0.0000**	**27.5002**	**27.5002**	**8.4300e-003**	**0.0000**	**27.7109**

3.6 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	1.7200e-003	3.2000e-004	0.0000	9.0000e-005	1.0000e-005	1.0000e-004	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3889	0.3889	3.0000e-005	0.0000	0.3896
Vendor	1.3000e-004	3.4300e-003	9.2000e-004	1.0000e-005	1.6000e-004	3.0000e-005	1.9000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.6515	0.6515	5.0000e-005	0.0000	0.6527
Worker	3.1000e-004	2.6000e-004	2.7700e-003	1.0000e-005	5.7000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5631	0.5631	2.0000e-005	0.0000	0.5636
Total	**4.9000e-004**	**5.4100e-003**	**4.0100e-003**	**2.0000e-005**	**8.2000e-004**	**4.0000e-005**	**8.7000e-004**	**2.2000e-004**	**4.0000e-005**	**2.7000e-004**	**0.0000**	**1.6035**	**1.6035**	**1.0000e-004**	**0.0000**	**1.6059**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0333	0.3317	0.2098	3.0000e-004		0.0223	0.0223		0.0206	0.0206	0.0000	27.5002	27.5002	8.4300e-003	0.0000	27.7109
Total	**0.0333**	**0.3317**	**0.2098**	**3.0000e-004**		**0.0223**	**0.0223**		**0.0206**	**0.0206**	**0.0000**	**27.5002**	**27.5002**	**8.4300e-003**	**0.0000**	**27.7109**

3.6 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	1.7200e-003	3.2000e-004	0.0000	9.0000e-005	1.0000e-005	1.0000e-004	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3889	0.3889	3.0000e-005	0.0000	0.3896
Vendor	1.3000e-004	3.4300e-003	9.2000e-004	1.0000e-005	1.6000e-004	3.0000e-005	1.9000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.6515	0.6515	5.0000e-005	0.0000	0.6527
Worker	3.1000e-004	2.6000e-004	2.7700e-003	1.0000e-005	5.7000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5631	0.5631	2.0000e-005	0.0000	0.5636
Total	**4.9000e-004**	**5.4100e-003**	**4.0100e-003**	**2.0000e-005**	**8.2000e-004**	**4.0000e-005**	**8.7000e-004**	**2.2000e-004**	**4.0000e-005**	**2.7000e-004**	**0.0000**	**1.6035**	**1.6035**	**1.0000e-004**	**0.0000**	**1.6059**

3.7 building paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.6300e-003	0.0249	0.0184	3.0000e-005		1.5200e-003	1.5200e-003		1.4100e-003	1.4100e-003	0.0000	2.4610	2.4610	6.8000e-004	0.0000	2.4781
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.6300e-003**	**0.0249**	**0.0184**	**3.0000e-005**		**1.5200e-003**	**1.5200e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**2.4610**	**2.4610**	**6.8000e-004**	**0.0000**	**2.4781**

3.7 building paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	6.9000e-004	1.3000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1556	0.1556	1.0000e-005	0.0000	0.1558
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.2000e-004	2.3900e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4873	0.4873	2.0000e-005	0.0000	0.4878
Total	**2.9000e-004**	**9.1000e-004**	**2.5200e-003**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**5.4000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.6428**	**0.6428**	**3.0000e-005**	**0.0000**	**0.6436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.6300e-003	0.0249	0.0184	3.0000e-005		1.5200e-003	1.5200e-003		1.4100e-003	1.4100e-003	0.0000	2.4610	2.4610	6.8000e-004	0.0000	2.4781
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.6300e-003**	**0.0249**	**0.0184**	**3.0000e-005**		**1.5200e-003**	**1.5200e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**2.4610**	**2.4610**	**6.8000e-004**	**0.0000**	**2.4781**

3.7 building paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	6.9000e-004	1.3000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1556	0.1556	1.0000e-005	0.0000	0.1558
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.2000e-004	2.3900e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4873	0.4873	2.0000e-005	0.0000	0.4878
Total	**2.9000e-004**	**9.1000e-004**	**2.5200e-003**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**5.4000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.6428**	**0.6428**	**3.0000e-005**	**0.0000**	**0.6436**

3.8 baghouse pad paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3000e-003	0.0525	0.0382	6.0000e-005		3.3000e-003	3.3000e-003		3.0400e-003	3.0400e-003	0.0000	5.0686	5.0686	1.5100e-003	0.0000	5.1063
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.3000e-003**	**0.0525**	**0.0382**	**6.0000e-005**		**3.3000e-003**	**3.3000e-003**		**3.0400e-003**	**3.0400e-003**	**0.0000**	**5.0686**	**5.0686**	**1.5100e-003**	**0.0000**	**5.1063**

3.8 baghouse pad paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.3800e-003	2.5000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3111	0.3111	2.0000e-005	0.0000	0.3117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	5.0000e-004	5.3200e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0829	1.0829	4.0000e-005	0.0000	1.0839
Total	**6.4000e-004**	**1.8800e-003**	**5.5700e-003**	**1.0000e-005**	**1.1700e-003**	**2.0000e-005**	**1.1900e-003**	**3.1000e-004**	**2.0000e-005**	**3.3000e-004**	**0.0000**	**1.3940**	**1.3940**	**6.0000e-005**	**0.0000**	**1.3956**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3000e-003	0.0525	0.0382	6.0000e-005		3.3000e-003	3.3000e-003		3.0400e-003	3.0400e-003	0.0000	5.0686	5.0686	1.5100e-003	0.0000	5.1063
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.3000e-003**	**0.0525**	**0.0382**	**6.0000e-005**		**3.3000e-003**	**3.3000e-003**		**3.0400e-003**	**3.0400e-003**	**0.0000**	**5.0686**	**5.0686**	**1.5100e-003**	**0.0000**	**5.1063**

3.8 baghouse pad paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.3800e-003	2.5000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3111	0.3111	2.0000e-005	0.0000	0.3117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	5.0000e-004	5.3200e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0829	1.0829	4.0000e-005	0.0000	1.0839
Total	**6.4000e-004**	**1.8800e-003**	**5.5700e-003**	**1.0000e-005**	**1.1700e-003**	**2.0000e-005**	**1.1900e-003**	**3.1000e-004**	**2.0000e-005**	**3.3000e-004**	**0.0000**	**1.3940**	**1.3940**	**6.0000e-005**	**0.0000**	**1.3956**

3.9 baghouse installation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.7200e-003	0.0795	0.0488	8.0000e-005		4.6500e-003	4.6500e-003		4.4500e-003	4.4500e-003	0.0000	7.1521	7.1521	1.4700e-003	0.0000	7.1889
Total	**9.7200e-003**	**0.0795**	**0.0488**	**8.0000e-005**		**4.6500e-003**	**4.6500e-003**		**4.4500e-003**	**4.4500e-003**	**0.0000**	**7.1521**	**7.1521**	**1.4700e-003**	**0.0000**	**7.1889**

3.9 baghouse installation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.3800e-003	2.5000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3111	0.3111	2.0000e-005	0.0000	0.3117
Vendor	2.0000e-005	6.6000e-004	1.8000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.1253	0.1253	1.0000e-005	0.0000	0.1255
Worker	6.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1083	0.1083	0.0000	0.0000	0.1084
Total	**1.2000e-004**	**2.0900e-003**	**9.6000e-004**	**0.0000**	**2.1000e-004**	**2.0000e-005**	**2.3000e-004**	**6.0000e-005**	**2.0000e-005**	**7.0000e-005**	**0.0000**	**0.5447**	**0.5447**	**3.0000e-005**	**0.0000**	**0.5456**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.7200e-003	0.0795	0.0488	8.0000e-005		4.6500e-003	4.6500e-003		4.4500e-003	4.4500e-003	0.0000	7.1521	7.1521	1.4700e-003	0.0000	7.1889
Total	**9.7200e-003**	**0.0795**	**0.0488**	**8.0000e-005**		**4.6500e-003**	**4.6500e-003**		**4.4500e-003**	**4.4500e-003**	**0.0000**	**7.1521**	**7.1521**	**1.4700e-003**	**0.0000**	**7.1889**

3.9 baghouse installation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.3800e-003	2.5000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3111	0.3111	2.0000e-005	0.0000	0.3117
Vendor	2.0000e-005	6.6000e-004	1.8000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.1253	0.1253	1.0000e-005	0.0000	0.1255
Worker	6.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1083	0.1083	0.0000	0.0000	0.1084
Total	**1.2000e-004**	**2.0900e-003**	**9.6000e-004**	**0.0000**	**2.1000e-004**	**2.0000e-005**	**2.3000e-004**	**6.0000e-005**	**2.0000e-005**	**7.0000e-005**	**0.0000**	**0.5447**	**0.5447**	**3.0000e-005**	**0.0000**	**0.5456**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.9900e-003	0.0272	0.0742	2.1000e-004	0.0157	2.8000e-004	0.0160	4.2100e-003	2.7000e-004	4.4800e-003	0.0000	19.2889	19.2889	1.1200e-003	0.0000	19.3168
Unmitigated	4.9900e-003	0.0272	0.0742	2.1000e-004	0.0157	2.8000e-004	0.0160	4.2100e-003	2.7000e-004	4.4800e-003	0.0000	19.2889	19.2889	1.1200e-003	0.0000	19.3168

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	9.64	9.64	9.64	41,328	41,328
Total	9.64	9.64	9.64	41,328	41,328

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.2739	7.2739	3.0000e-004	6.0000e-005	7.2999
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.2739	7.2739	3.0000e-004	6.0000e-005	7.2999
NaturalGas Mitigated	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2663	0.2663	1.0000e-005	0.0000	0.2679
NaturalGas Unmitigated	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2663	0.2663	1.0000e-005	0.0000	0.2679

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	4990.32	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2663	0.2663	1.0000e-005	0.0000	0.2679
Total		**3.0000e-005**	**2.4000e-004**	**2.1000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2663**	**0.2663**	**1.0000e-005**	**0.0000**	**0.2679**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	4990.32	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2663	0.2663	1.0000e-005	0.0000	0.2679
Total		**3.0000e-005**	**2.4000e-004**	**2.1000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2663**	**0.2663**	**1.0000e-005**	**0.0000**	**0.2679**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	22829.3	7.2739	3.0000e-004	6.0000e-005	7.2999
Total		**7.2739**	**3.0000e-004**	**6.0000e-005**	**7.2999**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	22829.3	7.2739	3.0000e-004	6.0000e-005	7.2999
Total		**7.2739**	**3.0000e-004**	**6.0000e-005**	**7.2999**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0234	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Unmitigated	0.0234	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.6600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0207					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Total	**0.0234**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.6600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0207					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Total	**0.0234**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.9281	0.0435	1.0700e-003	7.3335
Unmitigated	5.9281	0.0435	1.0700e-003	7.3335

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	1.32738 / 0	5.9281	0.0435	1.0700e-003	7.3335
Total		**5.9281**	**0.0435**	**1.0700e-003**	**7.3335**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	1.32738 / 0	5.9281	0.0435	1.0700e-003	7.3335
Total		**5.9281**	**0.0435**	**1.0700e-003**	**7.3335**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.0962	0.0648	0.0000	2.7157
Unmitigated	1.0962	0.0648	0.0000	2.7157

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	5.4	1.0962	0.0648	0.0000	2.7157
Total		**1.0962**	**0.0648**	**0.0000**	**2.7157**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	5.4	1.0962	0.0648	0.0000	2.7157
Total		**1.0962**	**0.0648**	**0.0000**	**2.7157**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 2 - New Baghouse/HEPA Installation (Summer)

R1430_one baghouse_20161220

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	2.00	1000sqft	0.05	2,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 2000 sq ft

Construction Phase - assumptions: 5 days for each baghouse demo/construction phase

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. one baghouse installation

Off-road Equipment - assumptions: default paving equipment, hp, and LF. Hr/d is from the R1155 EA. one baghouse installation

Off-road Equipment - default

Off-road Equipment - assumption

Off-road Equipment - assumption

Trips and VMT - assumptions

Demolition - assume 1000 sq ft for one baghouse and 1000 sq ft for one baghouse foundation

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	5.00	2.00
tblTripsAndVMT	HaulingTripNumber	5.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.3908	11.4430	8.6634	0.0136	0.3156	0.8114	1.1271	0.0614	0.7743	0.8357	0.0000	1,352.6954	1,352.6954	0.2452	0.0000	1,358.8241
Maximum	**1.3908**	**11.4430**	**8.6634**	**0.0136**	**0.3156**	**0.8114**	**1.1271**	**0.0614**	**0.7743**	**0.8357**	**0.0000**	**1,352.6954**	**1,352.6954**	**0.2452**	**0.0000**	**1,358.8241**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.3908	11.4430	8.6634	0.0136	0.3156	0.8114	1.1271	0.0614	0.7743	0.8357	0.0000	1,352.6954	1,352.6954	0.2452	0.0000	1,358.8241
Maximum	**1.3908**	**11.4430**	**8.6634**	**0.0136**	**0.3156**	**0.8114**	**1.1271**	**0.0614**	**0.7743**	**0.8357**	**0.0000**	**1,352.6954**	**1,352.6954**	**0.2452**	**0.0000**	**1,358.8241**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Mobile	0.0101	0.0495	0.1498	4.2000e-004	0.0306	5.4000e-004	0.0312	8.2000e-003	5.1000e-004	8.7100e-003		42.4043	42.4043	2.3900e-003		42.4641
Total	**0.0549**	**0.0499**	**0.1504**	**4.2000e-004**	**0.0306**	**5.8000e-004**	**0.0312**	**8.2000e-003**	**5.5000e-004**	**8.7500e-003**		**42.9656**	**42.9656**	**2.4000e-003**	**1.0000e-005**	**43.0287**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Mobile	0.0101	0.0495	0.1498	4.2000e-004	0.0306	5.4000e-004	0.0312	8.2000e-003	5.1000e-004	8.7100e-003		42.4043	42.4043	2.3900e-003		42.4641
Total	**0.0549**	**0.0499**	**0.1504**	**4.2000e-004**	**0.0306**	**5.8000e-004**	**0.0312**	**8.2000e-003**	**5.5000e-004**	**8.7500e-003**		**42.9656**	**42.9656**	**2.4000e-003**	**1.0000e-005**	**43.0287**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	old baghouse demo	Demolition	12/1/2016	12/7/2016	5	5	
2	old baghouse foundation demo	Demolition	12/8/2016	12/14/2016	5	5	
3	baghouse pad paving	Paving	12/15/2016	12/21/2016	5	5	
4	baghouse installation	Building Construction	12/22/2016	12/28/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
old baghouse demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse foundation demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse foundation demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse foundation demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
baghouse installation	Cranes	1	4.00	231	0.29
baghouse installation	Forklifts	1	4.00	89	0.20
baghouse installation	Generator Sets	1	4.00	84	0.74
baghouse installation	Tractors/Loaders/Backhoes	0	4.00	97	0.37
baghouse installation	Welders	1	4.00	46	0.45
baghouse pad paving	Cement and Mortar Mixers	1	4.00	9	0.56
baghouse pad paving	Pavers	1	4.00	130	0.42
baghouse pad paving	Rollers	1	4.00	80	0.38
baghouse pad paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
old baghouse demo	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse foundation demo	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse installation	4	1.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse pad paving	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 old baghouse demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0731**	**0.1969**	**0.6747**	**1.6200e-003**	**0.1188**	**2.1200e-003**	**0.1209**	**0.0316**	**2.0000e-003**	**0.0336**		**163.5446**	**163.5446**	**7.8700e-003**		**163.7413**

3.2 old baghouse demo - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0731**	**0.1969**	**0.6747**	**1.6200e-003**	**0.1188**	**2.1200e-003**	**0.1209**	**0.0316**	**2.0000e-003**	**0.0336**		**163.5446**	**163.5446**	**7.8700e-003**		**163.7413**

3.3 old baghouse foundation demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0731**	**0.1969**	**0.6747**	**1.6200e-003**	**0.1188**	**2.1200e-003**	**0.1209**	**0.0316**	**2.0000e-003**	**0.0336**		**163.5446**	**163.5446**	**7.8700e-003**		**163.7413**

3.3 old baghouse foundation demo - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0731**	**0.1969**	**0.6747**	**1.6200e-003**	**0.1188**	**2.1200e-003**	**0.1209**	**0.0316**	**2.0000e-003**	**0.0336**		**163.5446**	**163.5446**	**7.8700e-003**		**163.7413**

3.4 baghouse pad paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5767	5.7153	3.8503	5.5700e-003		0.3640	0.3640		0.3354	0.3354		567.2296	567.2296	0.1661		571.3821
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5767**	**5.7153**	**3.8503**	**5.5700e-003**		**0.3640**	**0.3640**		**0.3354**	**0.3354**		**567.2296**	**567.2296**	**0.1661**		**571.3821**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0731**	**0.1969**	**0.6747**	**1.6200e-003**	**0.1188**	**2.1200e-003**	**0.1209**	**0.0316**	**2.0000e-003**	**0.0336**		**163.5446**	**163.5446**	**7.8700e-003**		**163.7413**

3.4 baghouse pad paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5767	5.7153	3.8503	5.5700e-003		0.3640	0.3640		0.3354	0.3354	0.0000	567.2296	567.2296	0.1661		571.3821
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5767**	**5.7153**	**3.8503**	**5.5700e-003**		**0.3640**	**0.3640**		**0.3354**	**0.3354**	**0.0000**	**567.2296**	**567.2296**	**0.1661**		**571.3821**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0731**	**0.1969**	**0.6747**	**1.6200e-003**	**0.1188**	**2.1200e-003**	**0.1209**	**0.0316**	**2.0000e-003**	**0.0336**		**163.5446**	**163.5446**	**7.8700e-003**		**163.7413**

3.5 baghouse installation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0821	8.6552	5.0433	8.2100e-003		0.5199	0.5199		0.4975	0.4975		794.2194	794.2194	0.1680		798.4195
Total	**1.0821**	**8.6552**	**5.0433**	**8.2100e-003**		**0.5199**	**0.5199**		**0.4975**	**0.4975**		**794.2194**	**794.2194**	**0.1680**		**798.4195**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	6.8300e-003	5.0800e-003	0.0647	1.3000e-004	0.0112	1.0000e-004	0.0113	2.9600e-003	9.0000e-005	3.0500e-003		12.8728	12.8728	5.4000e-004		12.8862
Total	**0.0117**	**0.1512**	**0.0922**	**4.5000e-004**	**0.0182**	**1.2600e-003**	**0.0194**	**4.8800e-003**	**1.2000e-003**	**6.0800e-003**		**47.6894**	**47.6894**	**3.0400e-003**		**47.7653**

3.5 baghouse installation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0821	8.6552	5.0433	8.2100e-003		0.5199	0.5199		0.4975	0.4975	0.0000	794.2194	794.2194	0.1680		798.4195
Total	**1.0821**	**8.6552**	**5.0433**	**8.2100e-003**		**0.5199**	**0.5199**		**0.4975**	**0.4975**	**0.0000**	**794.2194**	**794.2194**	**0.1680**		**798.4195**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	6.8300e-003	5.0800e-003	0.0647	1.3000e-004	0.0112	1.0000e-004	0.0113	2.9600e-003	9.0000e-005	3.0500e-003		12.8728	12.8728	5.4000e-004		12.8862
Total	**0.0117**	**0.1512**	**0.0922**	**4.5000e-004**	**0.0182**	**1.2600e-003**	**0.0194**	**4.8800e-003**	**1.2000e-003**	**6.0800e-003**		**47.6894**	**47.6894**	**3.0400e-003**		**47.7653**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0101	0.0495	0.1498	4.2000e-004	0.0306	5.4000e-004	0.0312	8.2000e-003	5.1000e-004	8.7100e-003		42.4043	42.4043	2.3900e-003		42.4641
Unmitigated	0.0101	0.0495	0.1498	4.2000e-004	0.0306	5.4000e-004	0.0312	8.2000e-003	5.1000e-004	8.7100e-003		42.4043	42.4043	2.3900e-003		42.4641

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	3.36	3.36	3.36	14,400	14,400
Total	3.36	3.36	3.36	14,400	14,400

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
NaturalGas Unmitigated	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	4.76712	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Total		**5.0000e-005**	**4.7000e-004**	**3.9000e-004**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.5608**	**0.5608**	**1.0000e-005**	**1.0000e-005**	**0.5642**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.00476712	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Total		**5.0000e-005**	**4.7000e-004**	**3.9000e-004**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.5608**	**0.5608**	**1.0000e-005**	**1.0000e-005**	**0.5642**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Unmitigated	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	**0.0447**	**0.0000**	**2.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**4.4000e-004**	**4.4000e-004**	**0.0000**		**4.7000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	**0.0447**	**0.0000**	**2.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**4.4000e-004**	**4.4000e-004**	**0.0000**		**4.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 2 - New Baghouse/HEPA Installation (Winter)

R1430_one baghouse_20161220

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	2.00	1000sqft	0.05	2,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 2000 sq ft

Construction Phase - assumptions: 5 days for each baghouse demo/construction phase

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. one baghouse installation

Off-road Equipment - assumptions: default paving equipment, hp, and LF. Hr/d is from the R1155 EA. one baghouse installation

Off-road Equipment - default

Off-road Equipment - assumption

Off-road Equipment - assumption

Trips and VMT - assumptions

Demolition - assume 1000 sq ft for one baghouse and 1000 sq ft for one baghouse foundation

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	5.00	2.00
tblTripsAndVMT	HaulingTripNumber	5.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.3969	11.4504	8.6094	0.0135	0.3156	0.8114	1.1271	0.0614	0.7744	0.8357	0.0000	1,343.8696	1,343.8696	0.2450	0.0000	1,349.9934
Maximum	**1.3969**	**11.4504**	**8.6094**	**0.0135**	**0.3156**	**0.8114**	**1.1271**	**0.0614**	**0.7744**	**0.8357**	**0.0000**	**1,343.8696**	**1,343.8696**	**0.2450**	**0.0000**	**1,349.9934**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.3969	11.4504	8.6094	0.0135	0.3156	0.8114	1.1271	0.0614	0.7744	0.8357	0.0000	1,343.8696	1,343.8696	0.2450	0.0000	1,349.9934
Maximum	**1.3969**	**11.4504**	**8.6094**	**0.0135**	**0.3156**	**0.8114**	**1.1271**	**0.0614**	**0.7744**	**0.8357**	**0.0000**	**1,343.8696**	**1,343.8696**	**0.2450**	**0.0000**	**1,349.9934**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Mobile	9.7500e-003	0.0511	0.1396	4.0000e-004	0.0306	5.5000e-004	0.0312	8.2000e-003	5.2000e-004	8.7100e-003		40.1438	40.1438	2.3600e-003		40.2028
Total	**0.0545**	**0.0516**	**0.1402**	**4.0000e-004**	**0.0306**	**5.9000e-004**	**0.0312**	**8.2000e-003**	**5.6000e-004**	**8.7500e-003**		**40.7051**	**40.7051**	**2.3700e-003**	**1.0000e-005**	**40.7674**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Mobile	9.7500e-003	0.0511	0.1396	4.0000e-004	0.0306	5.5000e-004	0.0312	8.2000e-003	5.2000e-004	8.7100e-003		40.1438	40.1438	2.3600e-003		40.2028
Total	**0.0545**	**0.0516**	**0.1402**	**4.0000e-004**	**0.0306**	**5.9000e-004**	**0.0312**	**8.2000e-003**	**5.6000e-004**	**8.7500e-003**		**40.7051**	**40.7051**	**2.3700e-003**	**1.0000e-005**	**40.7674**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	old baghouse demo	Demolition	12/1/2016	12/7/2016	5	5	
2	old baghouse foundation demo	Demolition	12/8/2016	12/14/2016	5	5	
3	baghouse pad paving	Paving	12/15/2016	12/21/2016	5	5	
4	baghouse installation	Building Construction	12/22/2016	12/28/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
old baghouse demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse foundation demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse foundation demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse foundation demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
baghouse installation	Cranes	1	4.00	231	0.29
baghouse installation	Forklifts	1	4.00	89	0.20
baghouse installation	Generator Sets	1	4.00	84	0.74
baghouse installation	Tractors/Loaders/Backhoes	0	4.00	97	0.37
baghouse installation	Welders	1	4.00	46	0.45
baghouse pad paving	Cement and Mortar Mixers	1	4.00	9	0.56
baghouse pad paving	Pavers	1	4.00	130	0.42
baghouse pad paving	Rollers	1	4.00	80	0.38
baghouse pad paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
old baghouse demo	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse foundation demo	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse installation	4	1.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse pad paving	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 old baghouse demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0792**	**0.2043**	**0.6207**	**1.5300e-003**	**0.1188**	**2.1300e-003**	**0.1209**	**0.0316**	**2.0100e-003**	**0.0336**		**154.7187**	**154.7187**	**7.6700e-003**		**154.9106**

3.2 old baghouse demo - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0792**	**0.2043**	**0.6207**	**1.5300e-003**	**0.1188**	**2.1300e-003**	**0.1209**	**0.0316**	**2.0100e-003**	**0.0336**		**154.7187**	**154.7187**	**7.6700e-003**		**154.9106**

3.3 old baghouse foundation demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0792**	**0.2043**	**0.6207**	**1.5300e-003**	**0.1188**	**2.1300e-003**	**0.1209**	**0.0316**	**2.0100e-003**	**0.0336**		**154.7187**	**154.7187**	**7.6700e-003**		**154.9106**

3.3 old baghouse foundation demo - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0792**	**0.2043**	**0.6207**	**1.5300e-003**	**0.1188**	**2.1300e-003**	**0.1209**	**0.0316**	**2.0100e-003**	**0.0336**		**154.7187**	**154.7187**	**7.6700e-003**		**154.9106**

3.4 baghouse pad paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5767	5.7153	3.8503	5.5700e-003		0.3640	0.3640		0.3354	0.3354		567.2296	567.2296	0.1661		571.3821
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5767**	**5.7153**	**3.8503**	**5.5700e-003**		**0.3640**	**0.3640**		**0.3354**	**0.3354**		**567.2296**	**567.2296**	**0.1661**		**571.3821**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0792**	**0.2043**	**0.6207**	**1.5300e-003**	**0.1188**	**2.1300e-003**	**0.1209**	**0.0316**	**2.0100e-003**	**0.0336**		**154.7187**	**154.7187**	**7.6700e-003**		**154.9106**

3.4 baghouse pad paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5767	5.7153	3.8503	5.5700e-003		0.3640	0.3640		0.3354	0.3354	0.0000	567.2296	567.2296	0.1661		571.3821
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5767**	**5.7153**	**3.8503**	**5.5700e-003**		**0.3640**	**0.3640**		**0.3354**	**0.3354**	**0.0000**	**567.2296**	**567.2296**	**0.1661**		**571.3821**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0792**	**0.2043**	**0.6207**	**1.5300e-003**	**0.1188**	**2.1300e-003**	**0.1209**	**0.0316**	**2.0100e-003**	**0.0336**		**154.7187**	**154.7187**	**7.6700e-003**		**154.9106**

3.5 baghouse installation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0821	8.6552	5.0433	8.2100e-003		0.5199	0.5199		0.4975	0.4975		794.2194	794.2194	0.1680		798.4195
Total	**1.0821**	**8.6552**	**5.0433**	**8.2100e-003**		**0.5199**	**0.5199**		**0.4975**	**0.4975**		**794.2194**	**794.2194**	**0.1680**		**798.4195**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	7.4200e-003	5.5700e-003	0.0591	1.2000e-004	0.0112	1.0000e-004	0.0113	2.9600e-003	9.0000e-005	3.0500e-003		12.0475	12.0475	5.1000e-004		12.0601
Total	**0.0124**	**0.1542**	**0.0888**	**4.4000e-004**	**0.0182**	**1.2700e-003**	**0.0194**	**4.8800e-003**	**1.2100e-003**	**6.0900e-003**		**46.2917**	**46.2917**	**3.1200e-003**		**46.3696**

3.5 baghouse installation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0821	8.6552	5.0433	8.2100e-003		0.5199	0.5199		0.4975	0.4975	0.0000	794.2194	794.2194	0.1680		798.4195
Total	**1.0821**	**8.6552**	**5.0433**	**8.2100e-003**		**0.5199**	**0.5199**		**0.4975**	**0.4975**	**0.0000**	**794.2194**	**794.2194**	**0.1680**		**798.4195**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	7.4200e-003	5.5700e-003	0.0591	1.2000e-004	0.0112	1.0000e-004	0.0113	2.9600e-003	9.0000e-005	3.0500e-003		12.0475	12.0475	5.1000e-004		12.0601
Total	**0.0124**	**0.1542**	**0.0888**	**4.4000e-004**	**0.0182**	**1.2700e-003**	**0.0194**	**4.8800e-003**	**1.2100e-003**	**6.0900e-003**		**46.2917**	**46.2917**	**3.1200e-003**		**46.3696**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.7500e-003	0.0511	0.1396	4.0000e-004	0.0306	5.5000e-004	0.0312	8.2000e-003	5.2000e-004	8.7100e-003		40.1438	40.1438	2.3600e-003		40.2028
Unmitigated	9.7500e-003	0.0511	0.1396	4.0000e-004	0.0306	5.5000e-004	0.0312	8.2000e-003	5.2000e-004	8.7100e-003		40.1438	40.1438	2.3600e-003		40.2028

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	3.36	3.36	3.36	14,400	14,400
Total	3.36	3.36	3.36	14,400	14,400

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
NaturalGas Unmitigated	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	4.76712	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Total		**5.0000e-005**	**4.7000e-004**	**3.9000e-004**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.5608**	**0.5608**	**1.0000e-005**	**1.0000e-005**	**0.5642**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.00476712	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Total		**5.0000e-005**	**4.7000e-004**	**3.9000e-004**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.5608**	**0.5608**	**1.0000e-005**	**1.0000e-005**	**0.5642**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Unmitigated	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	**0.0447**	**0.0000**	**2.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**4.4000e-004**	**4.4000e-004**	**0.0000**		**4.7000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	**0.0447**	**0.0000**	**2.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**4.4000e-004**	**4.4000e-004**	**0.0000**		**4.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 2 - New Baghouse/HEPA Installation (Annual)

R1430_one baghouse_20161220

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	2.00	1000sqft	0.05	2,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 2000 sq ft

Construction Phase - assumptions: 5 days for each baghouse demo/construction phase

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. one baghouse installation

Off-road Equipment - assumptions: default paving equipment, hp, and LF. Hr/d is from the R1155 EA. one baghouse installation

Off-road Equipment - default

Off-road Equipment - assumption

Off-road Equipment - assumption

Trips and VMT - assumptions

Demolition - assume 1000 sq ft for one baghouse and 1000 sq ft for one baghouse foundation

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	5.00	2.00
tblTripsAndVMT	HaulingTripNumber	5.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.0113	0.0941	0.0672	1.1000e-004	1.9000e-003	6.2800e-003	8.1800e-003	3.9000e-004	5.9600e-003	6.3600e-003	0.0000	9.6567	9.6567	1.8900e-003	0.0000	9.7040
Maximum	**0.0113**	**0.0941**	**0.0672**	**1.1000e-004**	**1.9000e-003**	**6.2800e-003**	**8.1800e-003**	**3.9000e-004**	**5.9600e-003**	**6.3600e-003**	**0.0000**	**9.6567**	**9.6567**	**1.8900e-003**	**0.0000**	**9.7040**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.0113	0.0941	0.0672	1.1000e-004	1.9000e-003	6.2800e-003	8.1800e-003	3.9000e-004	5.9600e-003	6.3600e-003	0.0000	9.6567	9.6567	1.8900e-003	0.0000	9.7040
Maximum	**0.0113**	**0.0941**	**0.0672**	**1.1000e-004**	**1.9000e-003**	**6.2800e-003**	**8.1800e-003**	**3.9000e-004**	**5.9600e-003**	**6.3600e-003**	**0.0000**	**9.6567**	**9.6567**	**1.8900e-003**	**0.0000**	**9.7040**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1600e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Energy	1.0000e-005	9.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.6291	2.6291	1.1000e-004	2.0000e-005	2.6387
Mobile	1.7400e-003	9.4800e-003	0.0259	7.0000e-005	5.4700e-003	1.0000e-004	5.5700e-003	1.4700e-003	9.0000e-005	1.5600e-003	0.0000	6.7209	6.7209	3.9000e-004	0.0000	6.7306
Waste						0.0000	0.0000		0.0000	0.0000	0.3816	0.0000	0.3816	0.0226	0.0000	0.9455
Water						0.0000	0.0000		0.0000	0.0000	0.1467	1.9188	2.0655	0.0152	3.7000e-004	2.5552
Total	**9.9100e-003**	**9.5700e-003**	**0.0260**	**7.0000e-005**	**5.4700e-003**	**1.1000e-004**	**5.5800e-003**	**1.4700e-003**	**1.0000e-004**	**1.5700e-003**	**0.5284**	**11.2688**	**11.7972**	**0.0382**	**3.9000e-004**	**12.8700**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1600e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Energy	1.0000e-005	9.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.6291	2.6291	1.1000e-004	2.0000e-005	2.6387
Mobile	1.7400e-003	9.4800e-003	0.0259	7.0000e-005	5.4700e-003	1.0000e-004	5.5700e-003	1.4700e-003	9.0000e-005	1.5600e-003	0.0000	6.7209	6.7209	3.9000e-004	0.0000	6.7306
Waste						0.0000	0.0000		0.0000	0.0000	0.3816	0.0000	0.3816	0.0226	0.0000	0.9455
Water						0.0000	0.0000		0.0000	0.0000	0.1467	1.9188	2.0655	0.0152	3.7000e-004	2.5552
Total	**9.9100e-003**	**9.5700e-003**	**0.0260**	**7.0000e-005**	**5.4700e-003**	**1.1000e-004**	**5.5800e-003**	**1.4700e-003**	**1.0000e-004**	**1.5700e-003**	**0.5284**	**11.2688**	**11.7972**	**0.0382**	**3.9000e-004**	**12.8700**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	old baghouse demo	Demolition	12/1/2016	12/7/2016	5	5	
2	old baghouse foundation demo	Demolition	12/8/2016	12/14/2016	5	5	
3	baghouse pad paving	Paving	12/15/2016	12/21/2016	5	5	
4	baghouse installation	Building Construction	12/22/2016	12/28/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
old baghouse demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse foundation demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse foundation demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse foundation demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
baghouse installation	Cranes	1	4.00	231	0.29
baghouse installation	Forklifts	1	4.00	89	0.20
baghouse installation	Generator Sets	1	4.00	84	0.74
baghouse installation	Tractors/Loaders/Backhoes	0	4.00	97	0.37
baghouse installation	Welders	1	4.00	46	0.45
baghouse pad paving	Cement and Mortar Mixers	1	4.00	9	0.56
baghouse pad paving	Pavers	1	4.00	130	0.42
baghouse pad paving	Rollers	1	4.00	80	0.38
baghouse pad paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
old baghouse demo	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse foundation demo	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse installation	4	1.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse pad paving	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 old baghouse demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2900e-003	0.0281	0.0200	3.0000e-005		2.0200e-003	2.0200e-003		1.9300e-003	1.9300e-003	0.0000	2.6970	2.6970	5.4000e-004	0.0000	2.7104
Total	**3.2900e-003**	**0.0281**	**0.0200**	**3.0000e-005**	**4.9000e-004**	**2.0200e-003**	**2.5100e-003**	**7.0000e-005**	**1.9300e-003**	**2.0000e-003**	**0.0000**	**2.6970**	**2.6970**	**5.4000e-004**	**0.0000**	**2.7104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5200e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2779	0.2779	1.0000e-005	0.0000	0.2782
Total	**1.8000e-004**	**5.2000e-004**	**1.5900e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3563**	**0.3563**	**2.0000e-005**	**0.0000**	**0.3567**

3.2 old baghouse demo - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2900e-003	0.0281	0.0200	3.0000e-005		2.0200e-003	2.0200e-003		1.9300e-003	1.9300e-003	0.0000	2.6970	2.6970	5.4000e-004	0.0000	2.7104
Total	**3.2900e-003**	**0.0281**	**0.0200**	**3.0000e-005**	**4.9000e-004**	**2.0200e-003**	**2.5100e-003**	**7.0000e-005**	**1.9300e-003**	**2.0000e-003**	**0.0000**	**2.6970**	**2.6970**	**5.4000e-004**	**0.0000**	**2.7104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5200e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2779	0.2779	1.0000e-005	0.0000	0.2782
Total	**1.8000e-004**	**5.2000e-004**	**1.5900e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3563**	**0.3563**	**2.0000e-005**	**0.0000**	**0.3567**

3.3 old baghouse foundation demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2900e-003	0.0281	0.0200	3.0000e-005		2.0200e-003	2.0200e-003		1.9300e-003	1.9300e-003	0.0000	2.6970	2.6970	5.4000e-004	0.0000	2.7104
Total	**3.2900e-003**	**0.0281**	**0.0200**	**3.0000e-005**	**4.9000e-004**	**2.0200e-003**	**2.5100e-003**	**7.0000e-005**	**1.9300e-003**	**2.0000e-003**	**0.0000**	**2.6970**	**2.6970**	**5.4000e-004**	**0.0000**	**2.7104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5200e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2779	0.2779	1.0000e-005	0.0000	0.2782
Total	**1.8000e-004**	**5.2000e-004**	**1.5900e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3563**	**0.3563**	**2.0000e-005**	**0.0000**	**0.3567**

3.3 old baghouse foundation demo - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2900e-003	0.0281	0.0200	3.0000e-005		2.0200e-003	2.0200e-003		1.9300e-003	1.9300e-003	0.0000	2.6970	2.6970	5.4000e-004	0.0000	2.7104
Total	**3.2900e-003**	**0.0281**	**0.0200**	**3.0000e-005**	**4.9000e-004**	**2.0200e-003**	**2.5100e-003**	**7.0000e-005**	**1.9300e-003**	**2.0000e-003**	**0.0000**	**2.6970**	**2.6970**	**5.4000e-004**	**0.0000**	**2.7104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5200e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2779	0.2779	1.0000e-005	0.0000	0.2782
Total	**1.8000e-004**	**5.2000e-004**	**1.5900e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3563**	**0.3563**	**2.0000e-005**	**0.0000**	**0.3567**

3.4 baghouse pad paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.4400e-003	0.0143	9.6300e-003	1.0000e-005		9.1000e-004	9.1000e-004		8.4000e-004	8.4000e-004	0.0000	1.2865	1.2865	3.8000e-004	0.0000	1.2959
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4400e-003**	**0.0143**	**9.6300e-003**	**1.0000e-005**		**9.1000e-004**	**9.1000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.2865**	**1.2865**	**3.8000e-004**	**0.0000**	**1.2959**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5200e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2779	0.2779	1.0000e-005	0.0000	0.2782
Total	**1.8000e-004**	**5.2000e-004**	**1.5900e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3563**	**0.3563**	**2.0000e-005**	**0.0000**	**0.3567**

3.4 baghouse pad paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.4400e-003	0.0143	9.6300e-003	1.0000e-005		9.1000e-004	9.1000e-004		8.4000e-004	8.4000e-004	0.0000	1.2865	1.2865	3.8000e-004	0.0000	1.2959
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4400e-003**	**0.0143**	**9.6300e-003**	**1.0000e-005**		**9.1000e-004**	**9.1000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.2865**	**1.2865**	**3.8000e-004**	**0.0000**	**1.2959**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5200e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2779	0.2779	1.0000e-005	0.0000	0.2782
Total	**1.8000e-004**	**5.2000e-004**	**1.5900e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3563**	**0.3563**	**2.0000e-005**	**0.0000**	**0.3567**

3.5 baghouse installation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7100e-003	0.0216	0.0126	2.0000e-005		1.3000e-003	1.3000e-003		1.2400e-003	1.2400e-003	0.0000	1.8013	1.8013	3.8000e-004	0.0000	1.8108
Total	**2.7100e-003**	**0.0216**	**0.0126**	**2.0000e-005**		**1.3000e-003**	**1.3000e-003**		**1.2400e-003**	**1.2400e-003**	**0.0000**	**1.8013**	**1.8013**	**3.8000e-004**	**0.0000**	**1.8108**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0278	0.0278	0.0000	0.0000	0.0278
Total	**3.0000e-005**	**3.9000e-004**	**2.2000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1062**	**0.1062**	**1.0000e-005**	**0.0000**	**0.1064**

3.5 baghouse installation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7100e-003	0.0216	0.0126	2.0000e-005		1.3000e-003	1.3000e-003		1.2400e-003	1.2400e-003	0.0000	1.8013	1.8013	3.8000e-004	0.0000	1.8108
Total	**2.7100e-003**	**0.0216**	**0.0126**	**2.0000e-005**		**1.3000e-003**	**1.3000e-003**		**1.2400e-003**	**1.2400e-003**	**0.0000**	**1.8013**	**1.8013**	**3.8000e-004**	**0.0000**	**1.8108**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0278	0.0278	0.0000	0.0000	0.0278
Total	**3.0000e-005**	**3.9000e-004**	**2.2000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1062**	**0.1062**	**1.0000e-005**	**0.0000**	**0.1064**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.7400e-003	9.4800e-003	0.0259	7.0000e-005	5.4700e-003	1.0000e-004	5.5700e-003	1.4700e-003	9.0000e-005	1.5600e-003	0.0000	6.7209	6.7209	3.9000e-004	0.0000	6.7306
Unmitigated	1.7400e-003	9.4800e-003	0.0259	7.0000e-005	5.4700e-003	1.0000e-004	5.5700e-003	1.4700e-003	9.0000e-005	1.5600e-003	0.0000	6.7209	6.7209	3.9000e-004	0.0000	6.7306

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	3.36	3.36	3.36	14,400	14,400
Total	3.36	3.36	3.36	14,400	14,400

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.5362	2.5362	1.0000e-004	2.0000e-005	2.5453
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.5362	2.5362	1.0000e-004	2.0000e-005	2.5453
NaturalGas Mitigated	1.0000e-005	9.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0929	0.0929	0.0000	0.0000	0.0934
NaturalGas Unmitigated	1.0000e-005	9.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0929	0.0929	0.0000	0.0000	0.0934

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	1740	1.0000e-005	9.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0929	0.0929	0.0000	0.0000	0.0934
Total		**1.0000e-005**	**9.0000e-005**	**7.0000e-005**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0929**	**0.0929**	**0.0000**	**0.0000**	**0.0934**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	1740	1.0000e-005	9.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0929	0.0929	0.0000	0.0000	0.0934
Total		**1.0000e-005**	**9.0000e-005**	**7.0000e-005**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0929**	**0.0929**	**0.0000**	**0.0000**	**0.0934**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	7960	2.5362	1.0000e-004	2.0000e-005	2.5453
Total		**2.5362**	**1.0000e-004**	**2.0000e-005**	**2.5453**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	7960	2.5362	1.0000e-004	2.0000e-005	2.5453
Total		**2.5362**	**1.0000e-004**	**2.0000e-005**	**2.5453**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.1600e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Unmitigated	8.1600e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.2300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Total	**8.1600e-003**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0000**	**5.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.2300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Total	**8.1600e-003**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0000**	**5.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.0655	0.0152	3.7000e-004	2.5552
Unmitigated	2.0655	0.0152	3.7000e-004	2.5552

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0.4625 / 0	2.0655	0.0152	3.7000e-004	2.5552
Total		**2.0655**	**0.0152**	**3.7000e-004**	**2.5552**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0.4625 / 0	2.0655	0.0152	3.7000e-004	2.5552
Total		**2.0655**	**0.0152**	**3.7000e-004**	**2.5552**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.3816	0.0226	0.0000	0.9455
Unmitigated	0.3816	0.0226	0.0000	0.9455

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	1.88	0.3816	0.0226	0.0000	0.9455
Total		**0.3816**	**0.0226**	**0.0000**	**0.9455**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	1.88	0.3816	0.0226	0.0000	0.9455
Total		**0.3816**	**0.0226**	**0.0000**	**0.9455**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 3 - Building Improvement For Total Enclosure (Summer)

R1430_Total Enclosure Improvement_20161220

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 1000 sq ft

Construction Phase - assumptions: 5 days construction

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. Double the unit amount since two baghouses will be installed at the same time (worst case)

Trips and VMT - assumptions 10 hauling trips

Demolition -

Grading -

Off-road Equipment - assumption

R1430_Total Enclosure Improvement_20161220 - South Coast AQMD Air District, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	PhaseEndDate	4/19/2017	12/7/2016
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	0.00	10.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	0.7868	6.9683	3.2792	6.5400e-003	0.0350	0.3563	0.3913	9.5800e-003	0.3337	0.3433	0.0000	656.7851	656.7851	0.1520	0.0000	660.5847
Maximum	**0.7868**	**6.9683**	**3.2792**	**6.5400e-003**	**0.0350**	**0.3563**	**0.3913**	**9.5800e-003**	**0.3337**	**0.3433**	**0.0000**	**656.7851**	**656.7851**	**0.1520**	**0.0000**	**660.5847**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	0.7868	6.9683	3.2792	6.5400e-003	0.0350	0.3563	0.3913	9.5800e-003	0.3337	0.3433	0.0000	656.7851	656.7851	0.1520	0.0000	660.5847
Maximum	**0.7868**	**6.9683**	**3.2792**	**6.5400e-003**	**0.0350**	**0.3563**	**0.3913**	**9.5800e-003**	**0.3337**	**0.3433**	**0.0000**	**656.7851**	**656.7851**	**0.1520**	**0.0000**	**660.5847**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Mobile	5.0700e-003	0.0247	0.0749	2.1000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		21.2022	21.2022	1.1900e-003		21.2320
Total	**0.0275**	**0.0250**	**0.0752**	**2.1000e-004**	**0.0153**	**2.9000e-004**	**0.0156**	**4.1000e-003**	**2.8000e-004**	**4.3800e-003**		**21.4828**	**21.4828**	**1.2000e-003**	**1.0000e-005**	**21.5144**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Mobile	5.0700e-003	0.0247	0.0749	2.1000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		21.2022	21.2022	1.1900e-003		21.2320
Total	**0.0275**	**0.0250**	**0.0752**	**2.1000e-004**	**0.0153**	**2.9000e-004**	**0.0156**	**4.1000e-003**	**2.8000e-004**	**4.3800e-003**		**21.4828**	**21.4828**	**1.2000e-003**	**1.0000e-005**	**21.5144**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction/improvement	Building Construction	12/1/2016	12/7/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction/improvement	Cranes	1	4.00	231	0.29
Building Construction/improvement	Forklifts	1	4.00	89	0.20
Building Construction/improvement	Welders	1	4.00	46	0.45
Building Construction/improvement	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction/improve	3	0.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction/improvement - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7626	6.2378	3.1418	4.9200e-003		0.3505	0.3505		0.3282	0.3282		482.7021	482.7021	0.1395		486.1896
Total	**0.7626**	**6.2378**	**3.1418**	**4.9200e-003**		**0.3505**	**0.3505**		**0.3282**	**0.3282**		**482.7021**	**482.7021**	**0.1395**		**486.1896**

3.2 Building Construction/improvement - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0243	0.7305	0.1374	1.6200e-003	0.0350	5.8000e-003	0.0408	9.5800e-003	5.5500e-003	0.0151		174.0830	174.0830	0.0125		174.3951
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0243**	**0.7305**	**0.1374**	**1.6200e-003**	**0.0350**	**5.8000e-003**	**0.0408**	**9.5800e-003**	**5.5500e-003**	**0.0151**		**174.0830**	**174.0830**	**0.0125**		**174.3951**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7626	6.2378	3.1418	4.9200e-003		0.3505	0.3505		0.3282	0.3282	0.0000	482.7021	482.7021	0.1395		486.1896
Total	**0.7626**	**6.2378**	**3.1418**	**4.9200e-003**		**0.3505**	**0.3505**		**0.3282**	**0.3282**	**0.0000**	**482.7021**	**482.7021**	**0.1395**		**486.1896**

3.2 Building Construction/improvement - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0243	0.7305	0.1374	1.6200e-003	0.0350	5.8000e-003	0.0408	9.5800e-003	5.5500e-003	0.0151		174.0830	174.0830	0.0125		174.3951
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0243**	**0.7305**	**0.1374**	**1.6200e-003**	**0.0350**	**5.8000e-003**	**0.0408**	**9.5800e-003**	**5.5500e-003**	**0.0151**		**174.0830**	**174.0830**	**0.0125**		**174.3951**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.0700e-003	0.0247	0.0749	2.1000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		21.2022	21.2022	1.1900e-003		21.2320
Unmitigated	5.0700e-003	0.0247	0.0749	2.1000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		21.2022	21.2022	1.1900e-003		21.2320

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	1.68	1.68	1.68	7,200	7,200
Total	1.68	1.68	1.68	7,200	7,200

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
NaturalGas Unmitigated	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	2.38356	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Total		**3.0000e-005**	**2.3000e-004**	**2.0000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.2804**	**0.2804**	**1.0000e-005**	**1.0000e-005**	**0.2821**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.00238356	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Total		**3.0000e-005**	**2.3000e-004**	**2.0000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.2804**	**0.2804**	**1.0000e-005**	**1.0000e-005**	**0.2821**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 3 - Building Improvement For Total Enclosure (Winter)

R1430_Total Enclosure Improvement_20161220

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 1000 sq ft

Construction Phase - assumptions: 5 days construction

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. Double the unit amount since two baghouses will be installed at the same time (worst case)

Trips and VMT - assumptions 10 hauling trips

Demolition -

Grading -

Off-road Equipment - assumption

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	PhaseEndDate	4/19/2017	12/7/2016
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	0.00	10.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	0.7874	6.9809	3.2901	6.5100e-003	0.0350	0.3564	0.3914	9.5800e-003	0.3338	0.3434	0.0000	653.9232	653.9232	0.1526	0.0000	657.7372
Maximum	**0.7874**	**6.9809**	**3.2901**	**6.5100e-003**	**0.0350**	**0.3564**	**0.3914**	**9.5800e-003**	**0.3338**	**0.3434**	**0.0000**	**653.9232**	**653.9232**	**0.1526**	**0.0000**	**657.7372**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	0.7874	6.9809	3.2901	6.5100e-003	0.0350	0.3564	0.3914	9.5800e-003	0.3338	0.3434	0.0000	653.9232	653.9232	0.1526	0.0000	657.7372
Maximum	**0.7874**	**6.9809**	**3.2901**	**6.5100e-003**	**0.0350**	**0.3564**	**0.3914**	**9.5800e-003**	**0.3338**	**0.3434**	**0.0000**	**653.9232**	**653.9232**	**0.1526**	**0.0000**	**657.7372**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Mobile	4.8800e-003	0.0256	0.0698	2.0000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		20.0719	20.0719	1.1800e-003		20.1014
Total	**0.0273**	**0.0258**	**0.0701**	**2.0000e-004**	**0.0153**	**2.9000e-004**	**0.0156**	**4.1000e-003**	**2.8000e-004**	**4.3800e-003**		**20.3525**	**20.3525**	**1.1900e-003**	**1.0000e-005**	**20.3837**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Mobile	4.8800e-003	0.0256	0.0698	2.0000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		20.0719	20.0719	1.1800e-003		20.1014
Total	**0.0273**	**0.0258**	**0.0701**	**2.0000e-004**	**0.0153**	**2.9000e-004**	**0.0156**	**4.1000e-003**	**2.8000e-004**	**4.3800e-003**		**20.3525**	**20.3525**	**1.1900e-003**	**1.0000e-005**	**20.3837**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction/improvement	Building Construction	12/1/2016	12/7/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction/improvement	Cranes	1	4.00	231	0.29
Building Construction/improvement	Forklifts	1	4.00	89	0.20
Building Construction/improvement	Welders	1	4.00	46	0.45
Building Construction/improvement	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction/improve	3	0.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction/improvement - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7626	6.2378	3.1418	4.9200e-003		0.3505	0.3505		0.3282	0.3282		482.7021	482.7021	0.1395		486.1896
Total	**0.7626**	**6.2378**	**3.1418**	**4.9200e-003**		**0.3505**	**0.3505**		**0.3282**	**0.3282**		**482.7021**	**482.7021**	**0.1395**		**486.1896**

3.2 Building Construction/improvement - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0249	0.7430	0.1483	1.5900e-003	0.0350	5.8700e-003	0.0408	9.5800e-003	5.6200e-003	0.0152		171.2211	171.2211	0.0131		171.5476
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0249**	**0.7430**	**0.1483**	**1.5900e-003**	**0.0350**	**5.8700e-003**	**0.0408**	**9.5800e-003**	**5.6200e-003**	**0.0152**		**171.2211**	**171.2211**	**0.0131**		**171.5476**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7626	6.2378	3.1418	4.9200e-003		0.3505	0.3505		0.3282	0.3282	0.0000	482.7021	482.7021	0.1395		486.1896
Total	**0.7626**	**6.2378**	**3.1418**	**4.9200e-003**		**0.3505**	**0.3505**		**0.3282**	**0.3282**	**0.0000**	**482.7021**	**482.7021**	**0.1395**		**486.1896**

3.2 Building Construction/improvement - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0249	0.7430	0.1483	1.5900e-003	0.0350	5.8700e-003	0.0408	9.5800e-003	5.6200e-003	0.0152		171.2211	171.2211	0.0131		171.5476
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0249**	**0.7430**	**0.1483**	**1.5900e-003**	**0.0350**	**5.8700e-003**	**0.0408**	**9.5800e-003**	**5.6200e-003**	**0.0152**		**171.2211**	**171.2211**	**0.0131**		**171.5476**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.8800e-003	0.0256	0.0698	2.0000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		20.0719	20.0719	1.1800e-003		20.1014
Unmitigated	4.8800e-003	0.0256	0.0698	2.0000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		20.0719	20.0719	1.1800e-003		20.1014

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	1.68	1.68	1.68	7,200	7,200
Total	1.68	1.68	1.68	7,200	7,200

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
NaturalGas Unmitigated	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	2.38356	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Total		**3.0000e-005**	**2.3000e-004**	**2.0000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.2804**	**0.2804**	**1.0000e-005**	**1.0000e-005**	**0.2821**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.00238356	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Total		**3.0000e-005**	**2.3000e-004**	**2.0000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.2804**	**0.2804**	**1.0000e-005**	**1.0000e-005**	**0.2821**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 3 - Building Improvement For Total Enclosure (Annual)

R1430_Total Enclosure Improvement_20161220

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 1000 sq ft

Construction Phase - assumptions: 5 days construction

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. Double the unit amount since two baghouses will be installed at the same time (worst case)

Trips and VMT - assumptions 10 hauling trips

Demolition -

Grading -

Off-road Equipment - assumption

R1430_Total Enclosure Improvement_20161220 - South Coast AQMD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	PhaseEndDate	4/19/2017	12/7/2016
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	0.00	10.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.9700e-003	0.0175	8.2100e-003	2.0000e-005	9.0000e-005	8.9000e-004	9.8000e-004	2.0000e-005	8.3000e-004	8.6000e-004	0.0000	1.4868	1.4868	3.5000e-004	0.0000	1.4955
Maximum	**1.9700e-003**	**0.0175**	**8.2100e-003**	**2.0000e-005**	**9.0000e-005**	**8.9000e-004**	**9.8000e-004**	**2.0000e-005**	**8.3000e-004**	**8.6000e-004**	**0.0000**	**1.4868**	**1.4868**	**3.5000e-004**	**0.0000**	**1.4955**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.9700e-003	0.0175	8.2100e-003	2.0000e-005	9.0000e-005	8.9000e-004	9.8000e-004	2.0000e-005	8.3000e-004	8.6000e-004	0.0000	1.4868	1.4868	3.5000e-004	0.0000	1.4955
Maximum	**1.9700e-003**	**0.0175**	**8.2100e-003**	**2.0000e-005**	**9.0000e-005**	**8.9000e-004**	**9.8000e-004**	**2.0000e-005**	**8.3000e-004**	**8.6000e-004**	**0.0000**	**1.4868**	**1.4868**	**3.5000e-004**	**0.0000**	**1.4955**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

R1430_Total Enclosure Improvement_20161220 - South Coast AQMD Air District, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	4.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3145	1.3145	5.0000e-005	1.0000e-005	1.3194
Mobile	8.7000e-004	4.7400e-003	0.0129	4.0000e-005	2.7400e-003	5.0000e-005	2.7900e-003	7.3000e-004	5.0000e-005	7.8000e-004	0.0000	3.3604	3.3604	1.9000e-004	0.0000	3.3653
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.9594	1.0328	7.5700e-003	1.9000e-004	1.2776
Total	**4.9500e-003**	**4.7800e-003**	**0.0130**	**4.0000e-005**	**2.7400e-003**	**5.0000e-005**	**2.7900e-003**	**7.3000e-004**	**5.0000e-005**	**7.8000e-004**	**0.2642**	**5.6344**	**5.8986**	**0.0191**	**2.0000e-004**	**6.4350**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	4.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3145	1.3145	5.0000e-005	1.0000e-005	1.3194
Mobile	8.7000e-004	4.7400e-003	0.0129	4.0000e-005	2.7400e-003	5.0000e-005	2.7900e-003	7.3000e-004	5.0000e-005	7.8000e-004	0.0000	3.3604	3.3604	1.9000e-004	0.0000	3.3653
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.9594	1.0328	7.5700e-003	1.9000e-004	1.2776
Total	**4.9500e-003**	**4.7800e-003**	**0.0130**	**4.0000e-005**	**2.7400e-003**	**5.0000e-005**	**2.7900e-003**	**7.3000e-004**	**5.0000e-005**	**7.8000e-004**	**0.2642**	**5.6344**	**5.8986**	**0.0191**	**2.0000e-004**	**6.4350**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction/improvement	Building Construction	12/1/2016	12/7/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction/improvement	Cranes	1	4.00	231	0.29
Building Construction/improvement	Forklifts	1	4.00	89	0.20
Building Construction/improvement	Welders	1	4.00	46	0.45
Building Construction/improvement	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction/improve	3	0.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction/improvement - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9100e-003	0.0156	7.8500e-003	1.0000e-005		8.8000e-004	8.8000e-004		8.2000e-004	8.2000e-004	0.0000	1.0948	1.0948	3.2000e-004	0.0000	1.1027
Total	**1.9100e-003**	**0.0156**	**7.8500e-003**	**1.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**1.0948**	**1.0948**	**3.2000e-004**	**0.0000**	**1.1027**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	1.8900e-003	3.6000e-004	0.0000	9.0000e-005	1.0000e-005	1.0000e-004	2.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3921	0.3921	3.0000e-005	0.0000	0.3928
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.0000e-005**	**1.8900e-003**	**3.6000e-004**	**0.0000**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**2.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.3921**	**0.3921**	**3.0000e-005**	**0.0000**	**0.3928**

3.2 Building Construction/improvement - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9100e-003	0.0156	7.8500e-003	1.0000e-005		8.8000e-004	8.8000e-004		8.2000e-004	8.2000e-004	0.0000	1.0948	1.0948	3.2000e-004	0.0000	1.1027
Total	**1.9100e-003**	**0.0156**	**7.8500e-003**	**1.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**1.0948**	**1.0948**	**3.2000e-004**	**0.0000**	**1.1027**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	1.8900e-003	3.6000e-004	0.0000	9.0000e-005	1.0000e-005	1.0000e-004	2.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3921	0.3921	3.0000e-005	0.0000	0.3928
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.0000e-005**	**1.8900e-003**	**3.6000e-004**	**0.0000**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**2.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.3921**	**0.3921**	**3.0000e-005**	**0.0000**	**0.3928**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.7000e-004	4.7400e-003	0.0129	4.0000e-005	2.7400e-003	5.0000e-005	2.7900e-003	7.3000e-004	5.0000e-005	7.8000e-004	0.0000	3.3604	3.3604	1.9000e-004	0.0000	3.3653
Unmitigated	8.7000e-004	4.7400e-003	0.0129	4.0000e-005	2.7400e-003	5.0000e-005	2.7900e-003	7.3000e-004	5.0000e-005	7.8000e-004	0.0000	3.3604	3.3604	1.9000e-004	0.0000	3.3653

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	1.68	1.68	1.68	7,200	7,200
Total	1.68	1.68	1.68	7,200	7,200

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.2681	1.2681	5.0000e-005	1.0000e-005	1.2727
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.2681	1.2681	5.0000e-005	1.0000e-005	1.2727
NaturalGas Mitigated	0.0000	4.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0464	0.0464	0.0000	0.0000	0.0467
NaturalGas Unmitigated	0.0000	4.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0464	0.0464	0.0000	0.0000	0.0467

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	870	0.0000	4.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0464	0.0464	0.0000	0.0000	0.0467
Total		**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0464**	**0.0464**	**0.0000**	**0.0000**	**0.0467**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	870	0.0000	4.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0464	0.0464	0.0000	0.0000	0.0467
Total		**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0464**	**0.0464**	**0.0000**	**0.0000**	**0.0467**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	3980	1.2681	5.0000e-005	1.0000e-005	1.2727
Total		**1.2681**	**5.0000e-005**	**1.0000e-005**	**1.2727**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	3980	1.2681	5.0000e-005	1.0000e-005	1.2727
Total		**1.2681**	**5.0000e-005**	**1.0000e-005**	**1.2727**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**4.0700e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**4.0700e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.0328	7.5700e-003	1.9000e-004	1.2776
Unmitigated	1.0328	7.5700e-003	1.9000e-004	1.2776

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0.23125 / 0	1.0328	7.5700e-003	1.9000e-004	1.2776
Total		**1.0328**	**7.5700e-003**	**1.9000e-004**	**1.2776**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0.23125 / 0	1.0328	7.5700e-003	1.9000e-004	1.2776
Total		**1.0328**	**7.5700e-003**	**1.9000e-004**	**1.2776**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B-2

Construction Emissions Summary and Calculations

PR 1430 Construction Emissions Summary

(2017/1/8 rev.)

Estimated Maximum Construction Emissions by Pollutants (lbs/day)

Activity	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Scenario 1 - New Building Construction						
A. Demolition of building	1.42	12.16	8.75	0.02	1.46	0.89
B. Demolition of baghouse foundation	1.40	11.60	8.64	0.01	1.37	0.88
C. Demolition of baghouse	1.40	11.60	8.64	0.01	1.33	0.87
D. Grading	1.58	20.69	10.43	0.04	2.20	1.34
E. Building construction	1.30	12.96	8.22	0.01	0.89	0.80
F. Building paving	1.18	10.33	8.33	0.01	0.83	0.62
G. Baghouse pad paving	1.20	10.87	8.73	0.01	0.90	0.67
H. Baghouse installation	1.97	16.30	9.95	0.02	0.97	0.90
Scenario 2 - New Baghouse/HEPA Installation						
E. Building construction	0.79	6.98	3.29	0.01	0.39	0.34
B. Demolition of baghouse foundation	1.40	11.45	8.61	0.01	1.13	0.84
C. Demolition of baghouse	1.40	11.45	8.61	0.01	1.13	0.84
G. Baghouse pad paving	0.66	5.92	4.47	0.01	0.48	0.37
H. Baghouse installation	1.09	8.81	5.13	0.01	0.54	0.50
Scenario 3 - Building Improvement for Total Enclosure						
E. Building construction	0.79	6.98	3.29	0.01	0.39	0.34
Maximum Emissions	**6.00**	**64.00**	**40.00**	**0.08**	**5.60**	**4.10**

Reference: emissions are from CalEEMod 2016

PR1430 Construction GHG Emissions

22 total facilities

	MT	# of facility	Total MT
construction of 1 new building (with baghouse construction)	75.0	5	375.0
construction of 1 baghouse w/ or w/o HEPA	9.7	12	116.4
building improvement for total enclosure (only)	1.5	5	7.5
Total construction and amortized			16.63

PR 1430 Solid Waste Calculations

	cu. Yd	#	Total cu. Yd
Demolition of existing old baghouses and foundation (one)	640	26	16640
Demolition of existing building - Press Forge	600	1	600
Demolition of existing building - one of other 4 facilities	300	4	1200
			18440

PR 1430 Traffic Calculations

	cu yd per truck	total soil I/O	Total trucks required	Total trips	round trips /day
grading	16	1200	75	150	30

		One baghouse construction				**New building and baghouse construction**								
from CalEEMod	**Building Improvement**	old baghouse demo	old foundation demo	new foundation	new baghouse	old building demo	old 2 baghouse demo	old 2 foundation demo	grading	building construction	paving	2 new foundation	2 new baghouses	**Max**
Worker vehicle	-	2	2	1	1	2	2	2	2	5	4	4	1	**15**
Hauling trucks	2	1	1	1	1	5	2	2	30	2	1	2	2	**36**

APPENDIX B-3

Operational Emissions and Calculations

The information presented on pages 1 and 2 of this appendix are calculations that were relied upon in the analysis for the Draft EA. Subsequent to the release of the Draft EA for public review and comment, minor revisions were made to the project that required adjustments to the calculations. These adjusted calculations can be found on pages 3 and 4 and they supersede the calculations on pages 1 and 2. Finally, no changes were necessary to the calculations on page 5.

PR 1430 Operation Emissions **For the Draft EA**

(2017/01/08 rev.)

Summary

Key Requirements: Operation Phase	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day
Total Enclosurer, Baghouse, HEPA	-	-	-	-	-	-
Point Source Emission Controls	1.41	1.21	0.70	0.30	0.22	0.01
Housekeeping	9.47	15.92	1.44	1.11	2.97	0.02
Source Testing	1.14	1.13	0.34	0.20	0.20	0.00
Total	**12.02**	**18.26**	**2.49**	**1.61**	**3.39**	**0.03**

By Vehicle Class	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr	All facilities Max. # used/day	All facilities Max. # used/yr
Total Enclosurer, Baghouse, HEPA	-	-	-	-	-	-	18.23	0.00	0.00	18.30	32	32
Mobile Source - Diesel Trucks (MDT)	0.53	0.15	0.71	0.20	0.04	0.01	0.89	-	-	0.89	22	44
Roof top cleaning (aerial lift)	9.21	15.84	1.09	1.00	2.95	0.02	2.77	0.00	0.00	2.82	11	44
Source Testing (LDT)	2.29	2.27	0.69	0.40	0.40	0.01	0.72	-	-	0.72	22	44
Total	**12.02**	**18.26**	**2.49**	**1.61**	**3.39**	**0.03**	**22.62**	**0.00**	**0.00**	**22.73**		

Note:

1. 7 total enclosurer facilities will have 6 new negative air system operation (using 6 blowers or similar devices)
2. It is conservatively assumed that each facility will utilize 1 waste/wastewater disposal truck (MDT), 1 filter replacement truck(MDT), 1 source testing truck (LDT), 1 filter inspection truck (LDT), and 1 aerial lift.
3. Assumed every year 2 MDT round trips, 2 LDT round trips, and 2 times of aerial lift use will occur in every facility.
4. Assume in the worst day, there will be 22 MDT, 22 LDT and 11 aerial lifts used in 11 overlapping facilities

Aerial Lift

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e	Usage, hr/day
lb/hr	0.21	0.36	0.02	0.02	0.07	0.00	34.72	0.01	0.01	36.57	4
lb/day, MT/day for GHG	0.84	1.44	0.10	0.09	0.27	0.00	0.06	0.00	0.00	0.06	

EF: from OFFROAD2012

Light-Duty Truck (LDT) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	1.14	1.15	0.35	0.20	0.20	0.00	406.56			406.56
g/vehicle/day (IDLEX)	1.42	0.75	0.16	0.16	0.19	0.00	112.36			112.36
lb/day, MT/day for GHG	0.10	0.10	0.03	0.02	0.02	0.00	0.02	-	-	0.02

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

Medium-Duty Truck (MDT) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	0.26	0.08	0.37	0.10	0.02	0.00	505.00			505.00
g/vehicle (IDLEX)	0.33	0.05	0.01	0.01	0.02	0.00	139.57			139.57
lb/day, MT/day for GHG	0.02	0.01	0.03	0.01	0.00	0.00	0.02	-	-	0.02

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

PR 1430 Operation- Energy and GHG

Baghouse blower and negative air system/blower

	Consumption (GW-h/yr)	Consumption in MWh/yr
Blower (100 bhp)	0.001788	1.788

Ref: R1420.2 EA

	CO2	CH4	N2O	CO2e
Intensity (lb/MWhr)	702.44	0.03	0.01	704.95
MT/yr for GHG	0.57	0.00	0.00	0.57

Max. # of blowers (baghouse+negative air)	Max. Total Energy Consumption (MWh/yr)
32	57.216

PR 1430 Operation Emissions **For the Final EA**

(2017/02/08 rev.)

Summary

Key Requirements: Operation Phase	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day
Total Enclosurer, Baghouse, HEPA	-	-	-	-	-	-
Point Source Emission Controls	1.41	1.21	0.70	0.30	0.22	0.01
Housekeeping	9.47	15.92	1.44	1.11	2.97	0.02
Source Testing	1.14	1.13	0.34	0.20	0.20	0.00
Total	**12.02**	**18.26**	**2.49**	**1.61**	**3.39**	**0.03**

By Vehicle Class	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr	All facilities Max. # used/day	All facilities Max. # used/yr
Total Enclosurer, Baghouse, HEPA	-	-	-	-	-	-	20.51	0.00	0.00	20.58	36	36
Mobile Source - Diesel Trucks (MDT)	0.53	0.15	0.71	0.20	0.04	0.01	0.89	-	-	0.89	22	44
Roof top cleaning (aerial lift)	9.21	15.84	1.09	1.00	2.95	0.02	2.77	0.00	0.00	2.82	11	44
Source Testing (LDT)	2.29	2.27	0.69	0.40	0.40	0.01	0.72	-	-	0.72	22	44
Total	**12.02**	**18.26**	**2.49**	**1.61**	**3.39**	**0.03**	**24.89**	**0.00**	**0.00**	**25.02**		

Note:

1. 11 total enclosurer facilities will have 10 new negative air system operation (using 6 blowers or similar devices)
2. It is conservatively assumed that each facility will utilize 1 waste/wastewater disposal truck (MDT), 1 filter replacement truck(MDT), 1 source testing truck (LDT), 1 filter inspection truck (LDT), and 1 aerial lift.
3. Assumed every year 2 MDT round trips, 2 LDT round trips, and 2 times of aerial lift use will occur in every facility.
4. Assume in the worst day, there will be 22 MDT, 22 LDT and 11 aerial lifts used in 11 overlapping facilities

Aerial Lift

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e	Usage, hr/day
lb/hr	0.21	0.36	0.02	0.02	0.07	0.00	34.72	0.01	0.01	36.57	4
lb/day, MT/day for GHG	0.84	1.44	0.10	0.09	0.27	0.00	0.06	0.00	0.00	0.06	

EF: from OFFROAD2012

Light-Duty Truck (LDT) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	1.14	1.15	0.35	0.20	0.20	0.00	406.56			406.56
g/vehicle/day (IDLEX)	1.42	0.75	0.16	0.16	0.19	0.00	112.36			112.36
lb/day, MT/day for GHG	0.10	0.10	0.03	0.02	0.02	0.00	0.02	-	-	0.02

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

Medium-Duty Truck (MDT) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	0.26	0.08	0.37	0.10	0.02	0.00	505.00			505.00
g/vehicle (IDLEX)	0.33	0.05	0.01	0.01	0.02	0.00	139.57			139.57
lb/day, MT/day for GHG	0.02	0.01	0.03	0.01	0.00	0.00	0.02	-	-	0.02

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

PR 1430 Operation- Energy and GHG

Baghouse blower and negative air system/blower

	Consumption (GW-h/yr)	Consumption in MWh/yr
Blower (100 bhp)	0.001788	1.788

Ref: R1420.2 EA

	CO2	CH4	N2O	CO2e
Intensity (lb/MWhr)	702.44	0.03	0.01	704.95
MT/yr for GHG	0.57	0.00	0.00	0.57

Max. # of blowers (baghouse+negative air)	Max. Total Energy Consumption (MWh/yr)
36	64.368

PR 1430 Operation and Construction Overlap Emissions (overlap phase)

(2017/01/08 rev.)

Summary

Operation and Construction Overlap	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	Max. # used/day during overlap
Total Enclosurer, Baghouse, HEPA	-	-	-	-	-	-	
Mobile Source - Diesel Trucks (MDT)	0.10	0.03	0.13	0.04	0.01	0.00	4
Roof top cleaning (aerial lift)	1.67	2.88	0.20	0.18	0.54	0.00	2
Source Testing (LDT)	0.42	0.41	0.12	0.07	0.07	0.00	4
Operation Emissions	**2.19**	**3.32**	**0.45**	**0.29**	**0.62**	**0.01**	
Construction Emissions	**30.10**	**48.08**	**4.47**	**3.06**	**5.46**	**0.07**	
Total Operation and Construction Overlap Emissions	**32.29**	**51.40**	**4.92**	**3.35**	**6.08**	**0.07**	

Note:

1. The worst day during the construction and operation overlap phase has 4 MDT, 4 LDT and 2 aerial lifts used in 2 facilities overlapping.
2. The maximum emissions occur when 3 baghouses and 1 building are under construction in the operation and construction overlap phase

APPENDIX C

LIST OF AFFECTED FACILITIES

Facility Name	SIC	Facility ID	On Lists Per Government Code §65962.5 Per EnviroStor?	Address	City	Zip	Located Within Two Miles of Airport?	Nearest Sensitive Receptor	Approx. Distance to Nearest Sensitive Receptor (ft)	Nearest School	Approx. Distance to Nearest School (ft)
Aerocraft Heat Treating	3398	2372	No	15701 Minnesota Ave	Paramount	90723	No	Residential	70	West Gaines Elementary	1,800
Ajax Forge	3321	19515	No	1956-60 E 48TH ST	LOS ANGELES	90058	No	Residential	1,297	Vernon City School	1,437
Aluminum Precision Products	3365	36522	No	2621 S Susan St	Santa Ana	92704	No	Residential	1,200	Kenneth E- Mitchell School	2,000
American Hand Forge	N/A	171062	No	165 S SPRUCE AVE	RIALTO	92376	No	school	307	Rialto Community Day School	307
California Amforge Corp	3462	19051	No	750 N VERNON AVE	AZUSA	91702	No	Residential	450	Longfellow Elementary	1,750
California Drop Forge	3462	138568	Yes	1033 Alhambra Ave	LOS ANGELES	90012	No	Residential	~~660~~ 475	Ann Street Elementary	1,100
Carlton Forge Works	3462	22911	No	7743 E ADAMS ST	PARAMOUNT	90723	No	Residential	50	Lincoln Elementary	1,000
Chen Tech Industries	9999	110278	No	10 Autry	IRVINE	92618	No	school	2,500	Serrano Intermediate School	4,530
Continental Forge	3463	20600	No	512 CARLIN ST	COMPTON	90222	Yes[1]	Residential	400	~~Lindberg Elementary School~~ Sunshine Daycare Pre-School Center	~~1,400~~ 900
Firth Rixson	3312	144293	No	10685 Beech Ave	FONTANA	92337	No	Residential	360	Jurupa High Schoold	4,720
~~Foot Axle & Forge Co.~~	~~3714~~	~~4713~~	~~Yes~~	~~3954 WHITESIDE ST~~	~~LOS ANGELES~~	~~90063~~	~~No~~	~~Residential~~	~~370~~	~~Robert F Kenedy Elementary~~	~~1,650~~
Independent Forge	3599	1941	Yes	692 N Batavia	Orange	92868	No	Residential	910	Sycamore Elementary	2,330
Mattco Forge Inc.	N/A	181199	No	16443 Minnesota Ave	PARAMOUNT	90723	No	school	380	Wesley Gaines Elementary	380
MS Aerospace	3452	140513	No	13928 Balboa Blvd.	Sylmar	91342	No	Residential	240	Van Gogh Elementary School	7,392
Pacific Forge	3542	2946	No	10641 ETIWANDA AVE	FONTANA	92337	No	Residential	6,177	Henry J. Kaiser High School	9,134
Performance Forge	N/A	128708	No	7401 Telegraph Raod	Montebello	90640	No	Residential	850	Greenwood Elementary	6,178
Press Forge	3462	136	No	7700 JACKSON ST	PARAMOUNT	90723	No	Residential	165	Wesley Gaines Elemenatry	1,000
Quality Aluminum Forge	3542	144835	Yes	820 N CYPRESS ST	ORANGE	92867	No	Residential	100	Richland Continuation High	680
Schlosser Forge	3463	15504	No	11711 ARROW ROUTE	Rancho Cucamonga	91730	No	Residential	3,000	Upland Christian Academy	4,630
Shultz Steel	3462	16639	Yes	5321 FIRESTONE BLVD	SOUTH GATE	90280	No	Residential	790	Park Ave. Elementary School	1,960
Sierra Alloys	3325	181223	No	5467 Ayon Ave	Irwindale	91706	No	Residential	1,178	Valleydale Elementary School	3,760
Valley Forge Acquisition	3462	74086	No	444 MOTOR AVE	AZUSA	91702	No	Residential	1,900	Valleydale Elementary School	5,544
Weber Metals	3463	10966	No	16706 GARFIELD AVE	PARAMOUNT	90723	No	Residential	330	Wesley Gaines Elementary	422

Notes:

1. The facility is about 1.94 miles to Compton Airport.

APPENDIX D

REFERENCES

References

Organizations and Persons Consulted

REFERENCES

California Environmental Quality Act (CEQA) Guidelines, codified at Title 14 California Code of Regulations, §15000 et seq.

Compton Airport Master Plan Report, County of Los Angeles, Compton, California, August 1991.

Jacobsen, Mark Z. "Enhancement of Local Air Pollution by Urban CO2 Domes," Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at: http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html.

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SCAQMD, 2000. SCAQMD Air Toxics Control Plan, http://www.aqmd.gov/home/library/clean-air-plans/clean-communities-plan/air-toxics-control-plan

SCAQMD, 2003. SCAQMD Cumulative Impacts Working Group White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution, August 2003, Appendix D, Cumulative Impact Analysis Requirements Pursuant to CEQA, at D-3, http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf.

SCAQMD, 2008. CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. Governing Board Letter, December 5, 2008. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-%28ghg%29-ceqa-significance-thresholds/ghgboardsynopsis.pdf.

SCAQMD, 2010. SCAQMD 2010 Clean Communities Plan. November 5, 2010.

SCAQMD, 2016. Draft Final 2016 Air Quality Management Plan. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/draft-final-aqmp/clean/2016finaldraftaqmpdec2016(clean).pdf.

ORGANIZATIONS AND PERSONS CONSULTED

The CEQA statutes and Guidelines require that organizations and persons consulted be provided in the EA. A number of organizations, state and local agencies, and private industry have been consulted. The following organizations and persons have provided input into this document:

Re: Estimated baghouse sizing determination and cost
Greg Schlentz
Dust Collector Services
714.237.1690
gred@dustcollectorservices.co

Re: Estimated baghouse sizing determination and cost
EPA Air Pollution Control Cost Manual, Sixth Edition, January 2002
https://www3.epa.gov/ttncatc1/dir1/c_allchs.pdf

Re: Estimated baghouse Sizing Determination
Busch International Fugitive Emission Filtration Units
Bulletin No. FEF-802, PAR 1420.1, P. C-141, December 2013

Re: Construction Schedule
City of Azusa
Betty Gallardo
Development Services Assistant
Building Division
P: 626.812.5249
E: bgallardo@cit.azusa.ca.us
Phone Conversation on 12/14/2016
Building permit review requires 10-12 working days

Re: Construction Schedule
City of Paramount
John Carver
Assistant Community Development Director
P: 562.220.2048
E: jcarver@paramountcity.com
Personal Communication on 12/12/2016
Building permit review requires 10 working days

Re: Construction Schedule
City of Irwindale
Kyle Ingram
Building Permit Technician
P: 525.812.5249
E: kdingram@dpw.lacounty.gov
Phone conversation on 12/14/2016
Building permit review requires 10-20 working days

APPENDIX E

Comment Letters Received on the Draft EA and Responses to Comments

Comment Letter #1: Robert Komrij / Atlas Carpet Mills

Comment Letter #2: Dr. Shasta C. Gaughen Ph.D. / Pala Environmental

Comment Letter #3: Diana Watson / Department of Transportation

Sam Wang

From: Robert Komrij <rkomrij@atlascarpetmills.com>
Sent: Thursday, January 12, 2017 7:15 AM
To: Sam Wang
Subject: RULE 1430

Greetings Mr. Swang

With the proposed
Metal Grinding Operations requirements be applicable at manufacturing facilities?
Occasionally we weld, cut and grind metal in our maintenance departments.
Will these proposed restrictions apply to these type of operations?
Or do the proposed restrictions apply to ONLY Metal Forging Facilities.

Thanks
Robert Komrij / Atlas Carpet Mills / (323)724-9000 X2264

PALA ENVIRONMENTAL DEPARTMENT
PALA BAND OF MISSION INDIANS
PMB 50, 35008 Pala Temecula Road | Pala, CA 92059
Phone 760-891-3510 | Fax 760-742-3189

January 12, 2017

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178
Attention: Sam Wang

Re: Notice of Completion of a Draft Environmental Assessment – Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities

Dear Mr. Wang,

Thank you for the notice referenced above. This letter constitutes our response on behalf of Robert Smith, Chairman of the Pala Band of Mission Indians.

At this time, the Pala Band has no objection to the action outlined in the notice as proposed. We reserve the right to comment in the future should there be modifications or if new information becomes available.

If you have any questions or comments, please contact Darold Wallick, Air Technician for the Pala Environmental Department, at dwallick@palatribe.com or 760-891-3540.

Sincerely,

Shasta C. Gaughen, PhD
Environmental Director

DEPARTMENT OF TRANSPORTATION
DISTRICT 7-OFFICE OF TRANSPORTATION PLANNING
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 897-9446
FAX (213) 897-1337
www.dot.ca.gov

Comment Letter #3

Serious Drought.
Serious drought.
Help save water!

February 9, 2017

Barbara Radlein
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Proposed Rule 1430-Control of Emissions From Metal Grinding Operations at Metal Forging Facilities
SCH # 2017011019
GTS# 07-ALL-2017-00014

Dear Ms. Radlein:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Draft Environmental Assessment (DEA) of Proposed Rule 1430. The project involves South Coast Air Quality Management District's (SCAQMD) staff proposing new Rule 1430 to reduce toxic emissions, particulate matter emissions, and odors from metal grinding and metal cutting operations at metal forging facilities located in industrial, commercial, or mixed land use areas throughout the entire SCAQMD jurisdiction. Proposed rule 1430 does not apply to grinding or cutting operations that are conducted under a continuous flood of metal removal fluid. PR 1430 does not apply to grinding or cutting operations that are conducted under a continuous flood of metal removal fluid.

Please note that any work performed within State right of way will require an encroachment permit from Caltrans. In addition, please be reminded that transportation of heavy construction equipment materials, or other special equipment, which require the use of oversized-transport vehicles on State highways will require a Caltrans transportation permit. Caltrans recommends that large size truck trips be limited to off-peak commute hours.

If you have any questions please feel free to contact Melanie Bradford, the project coordinator at (213) 897-9446 and refer to GTS#07-ALL-2017-00014.

Sincerely,

DIANNA WATSON
LD-IGR Branch Chief

cc: Scott Morgan, State Clearinghouse

Responses to Comments

Response to Comment Letter #1: Proposed Rule 1430 only applies to metal grinding and metal cutting operations at metal forging facilities. The provisions of this rule do not extend to metal grinding and metal cutting operations at non-forging facilities.

Response to Comment Letter #2: Thank you for the comments. No responses are required.

Responses to Comment Letter #3: The comment is noted that any work performed within the State right of way will need an encroachment permit from the California Department of Transportation. However, the construction activities that may occur as a result of implementing the proposed project are expected to occur on private property at the affected facility sites and would not be expected to occur within the State right of way.

The comment is also noted that the transportation of construction equipment and materials on oversized-transport vehicles on State highways will require a Caltrans transportation permit. However, the nature of the construction activities that may occur as a result of implementing the proposed project is on a relatively small scale due to the compact size of the anticipated construction sites at the existing affected facilities. For this reason, the analysis anticipated that medium-duty trucks would be sufficient for supplying construction equipment and materials to the affected sites as well as hauling away waste and other materials as needed. Thus, medium-duty trucks would not be expected to qualify as oversized-transport vehicles that would require a Caltrans transportation permit or would need to operate only during off-peak hours.

Attachment J

Proposed Rule 1430

Control of Emissions from Metal Grinding Operations at Metal Forging Facilities

South Coast AQMD

Public Hearing
March 3, 2017

Background

- Metal grinding is an integral part of metal forging and is currently unregulated
- Community complaints of metallic odors combined with air sampling led to the metal grinding operation at Carlton Forge Works, a metal forging facility
- Offsite monitoring near Carlton Forge Works showed:
  - Elevated levels of nickel and hexavalent chromium
  - Nickel correlated to metal grinding operation
  - Ongoing investigation into sources of hexavalent chromium in Paramount

Carlton Forge Works

- Previous pollution controls were not sufficient
  - Point source controls not operated properly
  - Fugitive emissions released through bay doors and large vents of grind building
- Carlton Forge Works implemented voluntary measures between 2013 to 2015
  - Upgraded point source controls
  - Improved total enclosure
  - Enhanced housekeeping

Prior to Upgrades

Average off-site nickel levels were 90 ng/m^3 and reaching about 300 ng/m^3

After Upgrades

Average off-site nickel levels are about 16 ng/m^3

Need for Proposed Rule 1430

- 22 metal forging facilities that conduct grinding or cutting
- Similar to findings at Carlton Forge Works, point source controls and fugitive emission issues exist at other forging facilities
- Similar and possibly higher PM and toxic metal levels expected from other forging facilities as compared to Carlton Forge Works
- All alloys contain some toxic metals





Grinding 10 billets a day generates about 100 pounds per day of metal particulate...

=

500 pounds of metal PM in one week

Source: Valley Forge comment letter. Based on weight before and after grinding.

Metal grinding at forging facilities is an intense process where pollution controls are needed

8 metal forging facilities conduct grinding with no pollution controls

*** 2 facilities conduct grinding outside of a building enclosure**

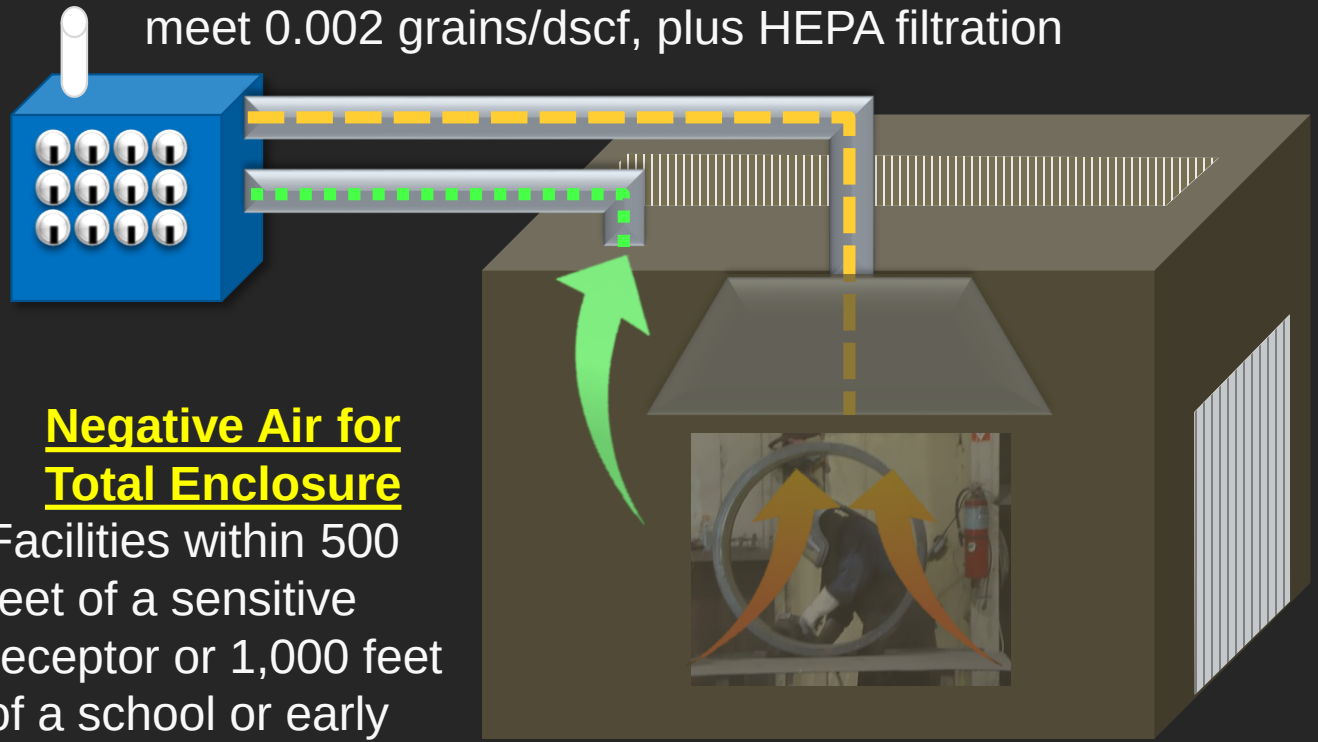
14 facilities have pollution controls; only 2 facilities are permitted...

Lack of proper design, operation, and maintenance of pollution controls can lead to release of metal particulate

Rule Approach

Point Source Controls

Pollution controls for metal grinding stations must meet 0.002 grains/dscf, plus HEPA filtration



Total Enclosure

Total enclosure closing openings to further contain fugitive metal particulate

Negative Air for Total Enclosure

Facilities within 500 feet of a sensitive receptor or 1,000 feet of a school or early education center

Housekeeping Measures

Clean any remaining fugitive metal particulate

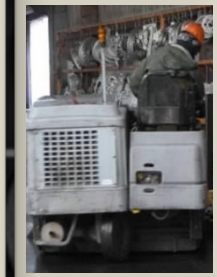
Key Compliance Dates

Day 1

- No Grinding or Cutting in Open Air
- Grinding in temporary enclosure or building

30 Days

Begin House-keeping Provisions



60 Days

Submit Permit Application

South Coast AQMD

180 Days

Upgrade Existing Buildings Close-Off Openings

1 Year or 6 Months After Permit Approval

- Complete New Total Enclosures
- Complete Total Enclosures w/Negative Air, if Required
- Install Pollution Control Equipment

Periodic Testing

- PM source test annually
- Multi-metals source test every 4 years
- Hexavalent chromium source test every 4 years, unless baghouse catch <1% total chromium
- Periodic smoke test

Continuous Monitoring

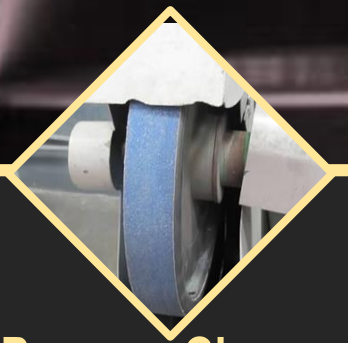
- Bag leak detection system
- Measure pressure across HEPA filter
  - Must use continuous data logger
- Additional source test if pressure across HEPA is outside of proper operating range
  - 3 times in 60 days; or
  - 1 time over a 24-hour period

Odor Contingency Measures

If facility receives 4 confirmed odor complaints* in a 6-month period, must select and implement measure to reduce odors

Operational Change

- Changing ingress and egress openings
- Moving grinding stations



Process Change

- Change grinding element
- Change materials applied to grinding piece

Enhancement to Total Enclosure

- Installation of booths or barriers for grinding stations
- Upgrade openings used for ingress or egress

Other Odor Reducing Measure

- Any other measure or modification that can help to reduce odors or minimize odors

* Complaints for the same event must from different households and odors must be related to metal grinding and cutting operations

Other Requirements

- Signage to report air quality issues
- Provisions when conducting maintenance of emission control devices
- Recordkeeping requirements – filter replacement, call logs for air quality issues, total chromium from each baghouse catch*
- Exclusions for small parts, grinders less than 1-inch in diameter, and maintenance grinding

TO REPORT AIR QUALITY ISSUES SUCH AS ODORS, DUST, OR SMOKE FROM THIS FACILITY, CALL EITHER THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG, OR [*FACILITY CONTACT PHONE NUMBER*]

* If seeking exclusion from hexavalent chromium source testing

Key Issue - Cost of Controls

- Key Issue:
  - One facility commented that total enclosure and point source controls (baghouse and HEPA) is a financial burden
- Staff Response:
  - Facility currently conducts metal grinding outdoors, without controls – higher costs are expected
  - Estimated capital cost is $340,000 (enclosure + pollution controls)
  - Use of existing enclosure can reduce capital cost to about $180,000

Staff Recommendation

Adopt the Resolution:

- **Certify the Final Environmental Assessment**
- **Adopt Proposed Rule 1430**