



Air Pollution Control Division

Small Business Assistance Program

An Overview of Colorado Air Regulations for: Surface Mining Operations, Concrete Batch Plants & Hot Mix Asphalt Plants

Surface mining operations in Colorado, including sand and gravel pits, borrow pits, and quarries, as well as concrete batching operations and hot mix asphalt plants, release air pollutants that are regulated by the Air Pollution Control Division (Division) at the Colorado Department of Public Health and Environment. This document provides an overview of the air pollution reporting and permitting requirements that apply to these operations.

➤ WHAT AREA IS MY BUSINESS IN?

Air emission reporting and permitting requirements in Colorado vary based on whether a business is located in an “attainment/attainment maintenance” area or a “nonattainment” area of Colorado. In general, air regulations are more stringent in “nonattainment” areas because these areas exceed the National Ambient Air Quality Standards for regulated pollutants. To determine if your business is located in an attainment or nonattainment area, visit the Divisions Ozone information page at: www.colorado.gov/pacific/cdphe/ozone-information

➤ AIR POLLUTANTS

The Air Pollution Control Division regulates two types of air pollutants: *criteria* and *non-criteria* pollutants. Criteria pollutants include particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and volatile organic compounds (VOCs), among other pollutants. Non-criteria pollutants include a list of over 188 chemicals listed in Colorado Regulation No. 3, Appendix B.

Surface mining operations, concrete batch plants, and hot mix asphalt plants commonly emit particulate matter, including total suspended particulates [TSP] and particulates with a diameter of 10 microns or less [PM10]. Particulate matter is emitted from processes such as conveying, screening, crushing, stockpiling, storing, and hauling materials. Dryers fired with natural gas, oil, propane, or diesel, may also emit TSP, PM10, carbon monoxide and nitrogen oxides. Dryers may emit VOCs or sulfur oxides depending on the type of fuel used.

➤ AIR EMISSION REPORTING AND PERMITTING REQUIREMENTS

In Colorado, obtaining an air permit is a two-step process. The first step is to report your air emissions through the submission of an Air Pollution Emission Notice (APEN) to the Division. For businesses with emissions above permitting thresholds, the second step involves

obtaining an air permit prior to construction or operation of the unit. Reporting and permitting thresholds are presented in Attachment A.

Reporting and Permitting thresholds can be more stringent if your source is in a nonattainment area because these areas exceed the National Ambient Air Quality Standards for regulated pollutants. VOCs and NO_x are considered precursors to Ozone and therefore businesses in the 8-hour nonattainment area must report at the nonattainment thresholds for those pollutants. All other pollutants are reported at the Attainment thresholds. To view a map of the nonattainment area in Colorado, visit: www.colorado.gov/pacific/cdphe/ozone-information

The Division will use the information provided on your APEN to determine whether your business requires an air permit. If an air permit is required, the APEN will become part of your permit application package.

The Division issues two types of air permits: Construction Permits and Operating Permits. Construction Permits are issued to minor sources of air pollution which emit less than 100 tons of pollutants in a nonattainment area, and less than 250 tons of pollutants in an attainment area. Operating Permits are issued to major sources that exceed these levels. A source with the “potential to emit” pollutants above these levels may choose to be designated as a “synthetic minor” source. Synthetic minor sources can obtain Construction Permits with restrictions on throughput or operating parameters to keep emissions below major source thresholds.

Note: A Construction Permit is required if the total actual uncontrolled emissions from all emission points at the site, that require an APEN (including the fugitive dust emissions from any operation,) are 5 tons per year or more of PM_{2.5} or PM₁₀ or 10 tons per year or more of total particulates.

“Potential to Emit”:

Potential to Emit (PTE) comes into play when determining if a facility is a major source. PTE is based on the maximum production levels possible if the equipment is operated at the maximum hourly rate 24 hours a day 365 days a year. The equipment’s PTE is often calculated by multiplying the emissions associated with the maximum hourly production rate time’s 8760 hrs (8760 = 24 hours a day X 365 days per year). A source with PTE exceeding 100 tons of VOC or Particulate Matter is considered to be a major source unless the operator obtains a Synthetic Minor Permit. A Synthetic Minor Permit contains limits that restrict production rates or operating parameters so that emissions are maintained below major source thresholds.

In Colorado, Construction Permits are issued in two phases: “Issuance 1” and “Final Approval to Operate”.

- Issuance 1 of a permit allows the plant to be constructed and begin operation. The source must self-certify to Issuance 1 of the permit once in operation within 180 days of receiving the first issued permit.

- After the owner certifies that the operation is in compliance with the conditions of Issuance 1 of the permit, the Division issues a “Final Approval to Operate” letter to operate under the conditions of Construction Permit Issuance 1. This letter confirms the completion of the self-certification requirements of that permit. The source is issued an invoice for processing time for this letter, and must pay the invoice within 30 days of receipt. Please note that if the permit processing fee is not paid within 30 days of receipt, you will be in violation of your permit conditions and may result in revocation of the permit.
- If the source modifies an existing permit, the source will be issued Construction Permit Issuance 2 (Issuance number determined by modification sequence). The source may have to self-certify to the new Issuance if required by the permit.

A permit describes key areas that an operator needs to address. The permit defines the type of air pollution control measures to be used, limits the annual production at the site, provides guidelines for opacity (how dense the visible emissions are allowed to be), and includes recordkeeping requirements.

➤ **GUIDELINES FOR SUBMITTING AN APEN AND/OR OBTAINING AN AIR PERMIT**

Specific guidelines for submitting an APEN and/or obtaining a permit for surface mining operations, surface mining process equipment, concrete batch plants, and hot asphalt plants are provided below. All APEN and related forms are available through the Division and can be downloaded at: www.colorado.gov/pacific/cdphe/air-permits

Surface Mining Sites

The APEN form titled “**Mining Operations - APEN and Application for Construction Permit and Fugitive Particulate Emissions Control Plan**” is used to report air emissions at surface mining operations. The form requests information on the location and ownership of the site and detailed information on the nature of site emissions, production, and equipment.

The APEN for Mining Operations also requests information on your site’s Fugitive Particulate Emissions Control Plan. If an air permit is issued for the site, the permit will contain a Particulate Emission Control Plan (PECP) that is derived from the information provided on the APEN. The PECP restricts visible emissions on-site and off-property transport of dust. The PECP includes control measures such as watering, revegetation, controlling vehicle speeds, and reclamation of disturbed areas.

Note: Surface mining activities that mine 70,000 tons or fewer of product material per year (i.e., raw material removal or processing for sale, which could include top soil, overburden, and raw material) are specifically exempt from permitting requirements per Regulation 3, Part B Section II.D.1.g and Part C II.E.3.qqq. However, an APEN may still be required even if a permit is not. Also, because site *equipment* is evaluated separately from the surface mining activities, site equipment such as screens, crushers, and generators may require an APEN and permit based on emissions even if the surface mining activities do not.

Surface Mining Process Equipment

The process equipment located at a surface mining site, such as generators, crushers, screen decks, and conveyor systems, are treated separately from the mining operations. Process equipment requires the submission of an APEN to the Division if the APEN reporting thresholds in Attachment A are exceeded. Process equipment is reported on the “**General APEN**” form, except for generators that have their own form titled “**Reciprocating Internal Combustion Engines- Specialty APEN**”. These forms require general information about the equipment such as the type of equipment, make, model, and serial number, hours of operation, and quantity of material processed through the equipment. Indicate whether the process equipment is *portable* or *fixed*:

Portable equipment can be moved from site to site; however, a “**Notice of Relocation**” (www.colorado.gov/pacific/cdphe/other-air-permitting-notice) must be submitted to the Division at least 10 days prior to the relocation of permitted portable equipment. Records should be maintained on the location of each piece of equipment at the home base.

Fixed equipment must remain at the source location indicated in the permit for at least two years. If you decide to move fixed equipment, you must submit an APEN to modify the permit to reflect “portable” equipment prior to the move.

Each individual piece of process equipment is typically reported on a separate APEN form. However, multiple pieces of equipment may be grouped and reported on a single General APEN form if the equipment will *always* remain together (i.e., pieces of equipment can not be added or removed from the group and portable generators cannot be grouped). For example, if a portable group of equipment is moved to a new site, each piece of equipment in that group must move to the new site, and no piece of equipment can be left behind. Grouping equipment onto a single General APEN, can help you avoid extra APEN filing and permitting fees.

- ❖ For assistance calculating emissions from crushing and screening operations go to: www.colorado.gov/pacific/sites/default/files/AP_Crushing-and-Screening-Emission-Calculator.xlsx

Special Regulatory Requirements for Surface Mining Process Equipment:

Process equipment may also be subject to New Source Performance Standards set forth in 40 C.F.R. Part 60, Subpart 000. Specifically, the following process equipment is subject to Subpart 000:

Portable Plants:

- Portable sand and gravel plants and crushed stone plants with maximum design capacities of greater than 150 tons per hour (based on the combined capacity of all initial or primary crushers) are subject to Subpart 000. In addition, all affected equipment (i.e., equipment that is in-line with the primary or initial crusher) is subject to Subpart 000.

Stationary (Fixed) Plants:

- Fixed sand and gravel plants and crushed stone processing equipment with maximum design capacities of greater than 25 tons per hour (based on the combined capacity of all initial or primary crushers) are subject to Subpart 000. In addition, all affected equipment (i.e., equipment that is in-line with the primary or initial crusher) is subject to Subpart 000.

Subpart 000 does not apply to Portland cement production, underground mines, or stand-alone screens without crushers or grinding mills. Equipment subject to Subpart 000 must undergo an opacity test as part of the self-certification in order to get a “Final Approval to Operate” letter. Opacity tests are used to verify that the equipment is operating in a manner consistent with the emission limits of Subpart 000. The source must give the Division notice of their intent to conduct performance tests at least 7 days prior to the test date(s). Opacity tests must be conducted within 60 days of reaching maximum production levels and within 180 days of initial startup. Opacity tests are conducted using EPA Method 9. The standard requires the duration of the Method 9 observations must be *30 minutes (five 6-minute averages)*. Fugitive emissions shall not exceed *7 percent opacity* for all types of affected facilities, except for crushers without capture systems, which have a fugitive emission limit of *12 percent opacity*. Opacity tests are not required for wet screening, bucket elevators, and conveyors when the material is saturated with water. This exemption applies up to, but not including, the crusher. Equipment located in an enclosed building must undergo fugitive emission testing.

Subpart 000 includes very specific requirements regarding monitoring of operations, reporting and recordkeeping, and changing equipment. If your equipment is subject to Subpart 000, take time to review and understand the requirements of this standard. Additional guidance on Subpart 000 and mineral processing is available for download under Business-Specific guidance for Mining and Mineral Processing at:

www.colorado.gov/pacific/cdphe/business-specific-guidance-h-to-m

Concrete Batch Plants

Surface mining operations are often co-located with concrete batch plants. Regardless of the overall site activities, minor source surface mining operations and concrete batch plants are always reported and permitted separately.

The APEN form titled “**Concrete Batching Plants - APEN and Application for Construction Permit**” is used to report air emissions at surface mining operations. This form requests information on the location and ownership of the site, detailed information on air pollution control equipment, and information on air emissions from stacks and silos, storage piles, and on-site haul vehicles and roads.

Unlike surface mining operations, which require separate APENs for the mining site and the process equipment, an entire concrete batch facility can be included on the APEN for Concrete Batch Plants. A concrete batch facility may include boilers, silos, control equipment such as bagfilters and filter socks, and transfer points such as sand and aggregate

transfer to elevated bins, cement unloading to elevated storage silos, weigh hopper loading, mixer loading and truck loading.

Concrete batch plants can be permitted as either fixed or portable plants. When portable plants are moved, a Notice of Relocation must be submitted to the Division at least 10 days prior to the relocation. If you decide to move a fixed concrete batch plant, you must submit an APEN to modify the permit to reflect a “portable” plant prior to the move.

Hot Mix Asphalt Plants

Surface mining operations are often co-located with hot mix asphalt plants. Regardless of the overall site activities, minor source surface mining operations and hot mix asphalt plants are always reported and permitted separately. Process equipment requires the submission of an APEN to the Division if the APEN reporting thresholds in Attachment A are exceeded.

The APEN form titled “**Hot Mix Asphalt Plants - APEN and Application for Construction Permit**” is used to report air emissions at hot mix asphalt plants. This form requests information on the location and ownership of the site and detailed information regarding the product, fuel, stack emissions, and air pollution control measures.

Unlike surface mining operations, which require separate APENs for the mining site and the process equipment, an entire hot mix asphalt facility can be included on the APEN for Hot Mix Asphalt. A hot mix asphalt facility is comprised only of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems.

Hot mix asphalt plants can be permitted as either fixed or portable plants. When portable plants are moved, a Notice of Relocation must be submitted to the Division at least 10 days prior to the relocation. If you decide to move fixed hot mix asphalt plant, you must submit an APEN to modify the permit to reflect “portable” plant prior to the move.

Special Regulatory Requirements

Hot mix asphalt plants built or modified after June 11, 1973 are subject to New Source Performance Standards set forth in 40 C.F.R. Part 60, Subpart I. Guidance for hot mix asphalt can be found at: www.colorado.gov/pacific/sites/default/files/AP_Hot-Mix-Asphalt.pdf. In accordance with Subpart I, asphalt plants must undergo stack tests for particulate concentrations and opacity tests in order to obtain the “Final Approval to Operate” letter from the Division. EPA Method 5 is used to demonstrate that emissions of particulate matter are below 0.04 gr/dscf. EPA Method 9 is used to demonstrate that opacity (visible emission) is below 30 percent. The source must give the Division notice of their intent to conduct the tests at least 30 days prior to the test date(s). Opacity tests must be conducted within 60 days of reaching maximum production levels and within 180 days of initial startup.

➤ ***New Source Performance Standard (NSPS) for Stationary Internal Combustion Engines***

On July 11, 2006 the EPA promulgated a rule that would decrease emissions from Stationary Compression Ignition Internal Combustion Engines (CI ICE's). Owners or operators of CI ICE's that commence construction, reconstruction, or modification (as defined at 40 CFR 60.14) after July 11, 2005 will be subject to this rule. A CI ICE is generally a diesel generator that is not portable. All CI ICE's manufactured after 2007 will have to be certified to EPA Non-road engine standards. Under this rule emergency generators will have to have non-resettable hour meters to track hours of operation. All Stationary Compression Ignition Internal Combustion Engines that fall under this NSPS shall submit an Initial Notification to the Division.

Guidance on this rule can be found under Business-Specific guidance for Engines and Generators at: www.colorado.gov/pacific/cdphe/business-specific-guidance-a-to-g

➤ **KEEPING YOUR APEN AND/OR AIR PERMIT CURRENT**

APENS are valid for five years and must be updated when certain changes occur at the site. It is important to submit revised or renewed APENs to keep your air permit accurate and up-to-date. A revised or renewed APEN must be submitted under the following scenarios:

1. Submit an APEN... Annually whenever a significant change in emissions occurs. Sources must submit a revised APEN to inform the Division of significant changes in actual emissions by April 30th of the following year (e.g., a change in emissions in calendar year 2010 must be reported by April 30, 2011.) The definition of a "significant change in emissions" varies based on whether the source emits criteria or non-criteria pollutants, as described below.

Criteria Pollutants:

- For sources emitting less than 100 tons per year a change in actual annual emissions of 5 tons per year or more above the level reported on the last APEN submitted to the Division;
- For volatile organic compound (VOC) sources in ozone nonattainment areas emitting less than 100 tons per year of VOC, a change in actual annual emissions of 1 ton or more, or 5 percent, whichever is greater above the level reported on the last APEN submitted to the Department;
- For sources emitting 100 tons per year or more, a change in actual annual emissions of 50 tons or more, or 5 percent, whichever is less above the level reported on the last APEN submitted to the Division;
- A change in actual emissions of 50 pounds per year of lead, above the level reported on the last APEN submitted to the Division.

Non-Criteria Pollutants:

- An increase in actual annual emissions of 50 percent or 5 tons, whichever is less.

2. Submit an APEN... When there is a change in ownership or a change in the business/source location.

An APEN must be submitted to the Division whenever the ownership or location of a business (or source) changes. For a change in ownership, the new owner must also supply a signed agreement containing the specific date for the transfer of the permit, responsibility, coverage and liability between the current and new permittee. After the Division receives the APEN, fee and written agreement, the Division will issue a new permit reflecting the ownership change.

If a company is changing its name only, and all other procedures and information as stated in the last APEN submitted by the business remains unchanged, the company must only submit one APEN indicating the name change and a **Permit Amendment** form specifying the name change if a permit exists.

3. Submit an APEN... When new or different air pollution control equipment is installed.

An APEN is required whenever new control equipment is installed, or whenever a different type of control equipment replaces an existing type of control equipment. Revised APENs are not required for routine maintenance or repair of control equipment.

4. Submit an APEN... When a permit limit is modified.

If you have an existing permit that requires modification (e.g., the owner wishes to change the operation equipment or throughput), a revised APEN must be submitted. Make sure you know your permit limits. If you think you may exceed those limits, you may want to modify your permit.

5. Submit an APEN... Before the current APEN expires.

An APEN is valid for five years. A new, complete APEN form must be submitted at least 30 days before expiration of the five year term of the current APEN. Contact the Division at 303-692-3150 if you are unsure when your APEN expires.

➤ **WHAT FEES APPLY?**

Filing Fee: A filing fee is required for each APEN submitted. This includes APENs submitted for administrative changes (e.g., change in ownership, change in location). Fees are subject to change by the legislature on an annual basis.

Annual Fee: All sources required to file APENs must pay annual fees. The Division bills each source subject to an APEN filing fee per ton of criteria pollutants emitted and per ton of non-criteria (hazardous air pollutants) emitted. The Division mails invoices for these fees in May or June of each year (these fees account for the emissions from the previous year's operation). Fees are subject to change by the legislature on an annual basis.

Permit Processing Fee: In addition to the APEN filing fee, permit-processing fees will be assessed at an hourly rate. If the total processing time is anticipated to be more than 30 hours the Division will contact the applicant in writing and provide an estimate of the

projected processing time. The applicant can waive this notice by submitting a letter making this request when the application is submitted.

Current fee information is available online at: www.colorado.gov/pacific/cdphe/emissions-and-permitting-fees

➤ **RECORD KEEPING**

Surface mining operations, concrete batch plants, and asphalt plants must maintain annual records of product throughput in order to demonstrate compliance with the permit limits and requirements. These records must be made available to the Division for inspection upon request. For portable plants, records should indicate where the plant has been located, the length of time at each location, and the amount of material processed at each location. The site owner or operator should also maintain a copy of the most recent APEN and air permit (if required). The permit number must be permanently affixed on each piece of permitted equipment.

SMALL BUSINESS ASSISTANCE

The Small Business Assistance Program (SBAP) is available to answer questions you may have regarding environmental issues at your site. The SBAP can help you understand regulations, determine what your company has to do to be in compliance, help you fill out required forms, calculate your emissions, or provide information by presenting a workshop for your company or for your industry. We are here to help, and our services are always free.

➤ **RESOURCES**

- ❖ Air Pollution Control Division (APCD): (303) 692-3100
- ❖ Small Business Assistance Program: (303) 692-3175 or 3148
- ❖ Small Business Ombudsman: (303) 692-2135

ATTACHMENT A

APEN REPORTING THRESHOLDS		
Pollutant Category	Uncontrolled Actual Emissions	
	Attainment Area	Non-attainment Area
Criteria Pollutants	2 tons per year	1 ton per year
Lead	100 pounds per year	100 pounds per year
Non-Criteria Pollutants ¹	≥ 250 pounds per year of any individual non-criteria reportable pollutant	≥ 250 pounds per year of any individual non-criteria reportable pollutant

AIR PERMITTING THRESHOLDS		
Pollutant Category	Uncontrolled Actual Emissions	
	Attainment Area (tons per year)	Non-attainment Area (tons per year)
PM-10	5	1
Total suspended particulates	10	5
Volatile organic compounds	5	2
Carbon monoxide	10	5
Sulfur dioxide	10	5
Nitrogen oxides	10	5
Lead	200 pounds per year	200 pounds per year
Other criteria pollutants: fluorides, sulfuric acid mist, hydrogen sulfide, total reduced sulfur, reduced sulfur compounds.	2	2