



Asphalt Plants Frequently Asked Questions

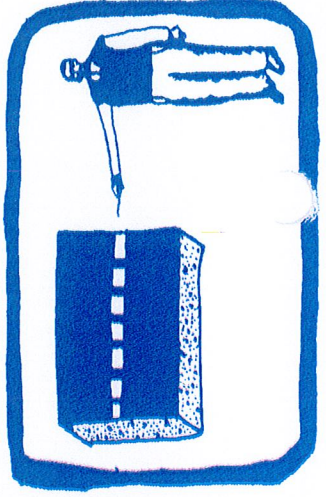
Asphalt Plants: Frequently Asked Questions

The N.C. Department of Environment and Natural Resources (DENR) receives many calls and letters about asphalt plants, generally when companies apply for permits to build new facilities. North Carolina has about 150 asphalt plants, and about five new facilities are permitted each year.

Many asphalt plants are portable, so they can be moved to different locations based on needs for new highways and other construction projects. Before a company can build or operate an asphalt plant, it must obtain an air quality permit and in some cases may need water quality permits. In DENR, the Division of Air Quality handles air permits for asphalt plants, and the Division of Water Quality handles water permits (if applicable).

What is asphalt and how is it made?

Asphalt is a paving material made from crushed rock and asphalt cement, which is a mixture of petroleum compounds produced by oil refineries. Asphalt plants heat the asphalt cement in enclosed tanks then combine it with crushed rock. The asphalt is then conveyed to storage silos, where it is loaded onto trucks for delivery to construction sites for highways, parking lots and residential areas.



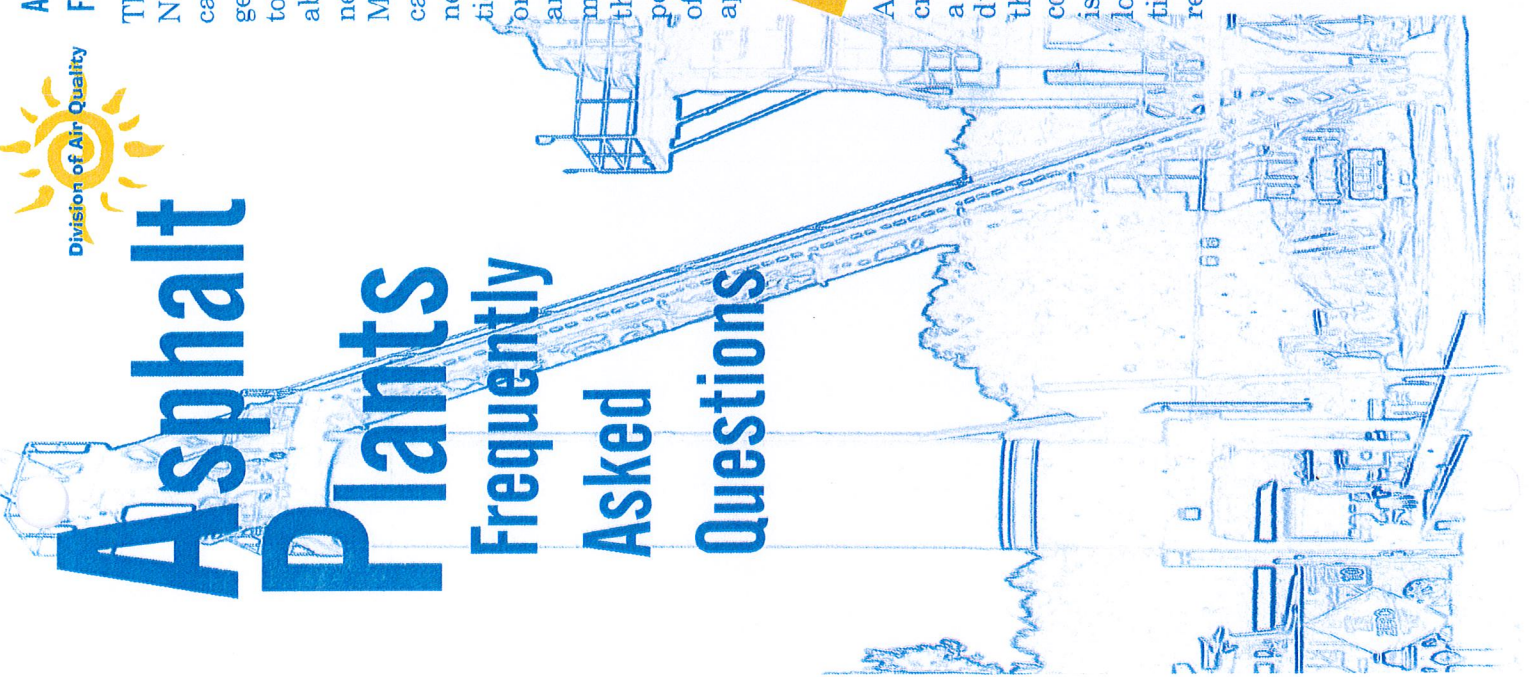
How do asphalt plants affect air quality?

Air emissions are created at several stages during asphalt production. Most of the emissions come from an asphalt plant's main stack. Fumes from asphalt storage and loading areas account for the remaining air emissions, collectively referred to as fugitive emissions.

Asphalt production, like any process in which materials are heated or burned, can produce a range of air emissions. Many of these same compounds are emitted by cars and trucks, fireplaces and wood stoves, wildfires, and other industries. While some of these emissions potentially can be unhealthy to breathe, such problems can be prevented by requiring asphalt plants to install controls or take other measures that reduce their emissions of harmful air pollutants. That is the guiding principle behind state air quality rules, which set stringent limits for a range of pollutants based on their known health effects. In addition, the Division of Air Quality (DAQ) plans to re-examine its permitting procedures pending the results of a nationwide study of asphalt plant emissions being conducted by the U.S. Environmental Protection Agency (EPA). If changes are warranted based on the EPA study, the DAQ can reopen asphalt plant permits issued since April 1998.

How does the Division of Air Quality control asphalt plants?

All asphalt plants must obtain an air permit from the Division of Air Quality. The DAQ reviews all air permit applications for compliance with state and federal air quality



Is it safe to live near an asphalt plant?

North Carolina's air quality regulations are designed to protect public health. In addition, North Carolina has one of the more stringent state programs for regulating emissions of air toxics. The N.C. Environmental Management Commission adopted the state's air toxics rules in 1990, based on the recommendations of a panel of scientists and health experts who spent more than five years developing a list of air pollutants most likely to pose health risks. The air toxics rules set limits for 105 pollutants that are known to pose either short or long-term hazards for people who breathe them. Under these rules, facilities are not allowed to emit pollutants that exceed any of the air toxics limits at or beyond their property lines. Thus, citizens living near plants that meet the air toxics rules should not be exposed to unhealthy levels of air pollution.

How does the Division of Water Quality control asphalt plants?

Asphalt plants may need a stormwater discharge permit from the Division of Water Quality, depending on where they are located and how they operate. Generally, a facility needs a stormwater permit if it collects rainwater from its site and discharges that runoff into a stream or lake. Many asphalt plants, however, do not discharge their runoff into water bodies and do not need stormwater permits. Asphalt plants also need to obtain

sedimentation control permits, which are required if plant construction disturbs more than one acre of land. There are no state rules that restrict asphalt plants from local governments may not allow it.

Why are there are so many asphalt plants?

North Carolina has the second-largest state-maintained highway system in the United States, and roads. The state has about 78,000 miles of roads, with more under construction every year. In addition, the state repaves about 4,400 miles of roads every year. Another fact is that asphalt plants are located fairly close to highways. Paving is difficult at lower temperatures, and highways are not hot enough (at least 250 degrees). That means asphalt plants must be located fairly close to highways.

Who controls where asphalt plants are located?

In reviewing air quality permits for asphalt plants, the Division of Air Quality must ensure that each permit contains a condition stating that the facility must meet these requirements. But zoning, land use, floodplain development, or where a company decides to build a plant. In North Carolina, the local government is responsible for regulating such land use matters, and they have the final authority over the issuance of building permits. However, many counties and municipalities, particularly in rural areas, use controls. The DAQ cannot deny a permit simply because local residents are opposed to a facility. Decisions on whether facilities can meet air quality regulations.

How can I find out more about asphalt plants?

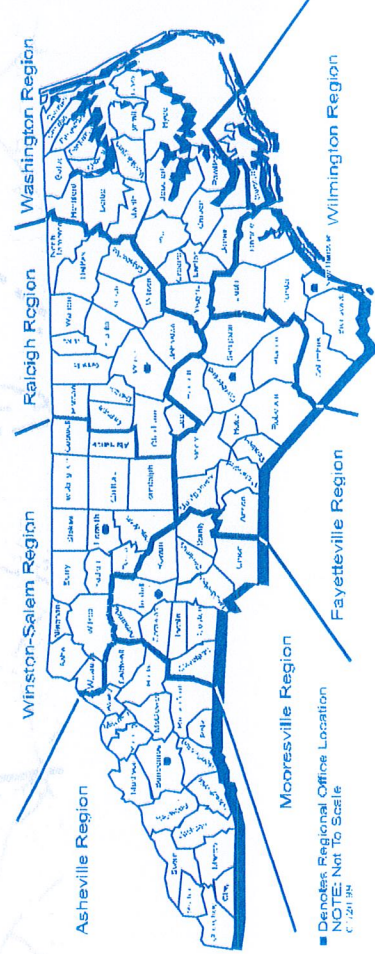
The Division of Air Quality lists applications for air quality permits on its web site, <http://daq.state.nc.gov>. The DAQ also contains news releases with information about asphalt plants, such as changes in regulations or no hearings. For more information about asphalt plants or permit applications, contact the division's:

Asheville Regional Office
59 Woodfin Place
Asheville, NC 28801
(828) 251-6208

Fayetteville Regional Office
225 Green St. Suite 714
Fayetteville, NC 28301
(910) 486-1541

Mooreville Regional Office
919 North Main St.
Mooreville, NC 28202
(704) 663-1699

Raleigh Regional Office
3800 Barrett Dr.
Raleigh, NC 27611
(919) 571-4700



AALs - acceptable ambient levels



SUMMARY POINTS

- North Carolina has a comprehensive program to protect the health of even the most sensitive individuals from the effects of potentially toxic air pollutants. This program is based on meeting "acceptable ambient levels" ("AALs") and these levels are set based on health-risk criteria and include significant margins of safety. According to the North Carolina Department of Environment and Natural Resources, AALs are set so that they are "below the concentration that would produce adverse health effects in sensitive subgroups of the general population."
- BREDL has used a very conservative (i.e. showing higher impacts than would actually be demonstrated) air-dispersion model referred to as the USEPA SCREEN3 model in their report "Poultry Manure Incineration Toxic Air Pollution Impacts" (May 6, 2009). The results of BREDL's conservative modeling actually demonstrate that a Fibrowatt plant, using Minnesota permit emissions data and size, would have met all of the selected North Carolina acceptable ambient levels – though BREDL never included these results in the report.
- An important factor overlooked in the BREDL analysis is Fibrowatt's previously stated intention to build a smaller plant in Surry County, currently envisioned as a 40 mega-watt plant. BREDL's analysis assumes a 55 mega-watt plant; therefore, the impacts of the Surry Plant actually are expected to be significantly lower than indicated throughout BREDL's comparative analysis.
- Results of the BREDL SCREEN3 model demonstrate that a Fibrowatt plant, using conservative emissions data from the 2001 Minnesota permit application, would have been anywhere from 1.7 to 5,177 times lower than North Carolina's acceptable ambient levels.
- BREDL's conclusions regarding chromium are incorrect as they failed to note that the North Carolina acceptable ambient level is for chromium(VI) a small part of total chromium emissions. Using an appropriate and conservative chromium(VI) assumption for Minnesota permit levels indicate that the plant would have easily met the North Carolina AALs.
- A comparison of the BREDL SCREEN3 results and refined air-dispersion modeling, as used for the Minnesota plant and as will also be required for North Carolina modeling, indicate that the Minnesota modeling results for annual ambient levels were actually 13 times lower than the conservative BREDL SCREEN3 results. For regulatory purposes, refined modeling is the required approach, suggesting that actual annual results for a Surry plant would potentially be 13 times lower than the levels calculated (but not presented) by BREDL.
- Since the Minnesota plant began operation in 2007, stack tests have been undertaken for metals emissions. These 2009 results indicate actual emission levels are anywhere from 6 to 211 times lower than the emissions estimates used during Minnesota permitting and used by BREDL for a comparison. Metals evaluated using the BREDL SCREEN3 technique and current 2009 metals testing results indicate that the impacts for emissions would be roughly 59 to 183,000 times below the North Carolina acceptable ambient levels.
- Based on the 2009 Minnesota metals emissions results and the more appropriate 2001 refined modeling approach as used in the Minnesota permit (13 times lower for annual results than BREDL's approach), indicate that the impacts for metals emissions could be more than 750 times lower than the applicable North Carolina acceptable ambient levels.
- Based on information from Fibrowatt's biomass plant in Minnesota and BREDL's SCREEN3 air-dispersion modeling approach, it is obvious that a Fibrowatt plant will be very protective of the local population.