
ENVIRONMENTAL Fact Sheet



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New Hampshire's Gasoline Vapor Recovery Program *Protecting the Air We Breathe*

Smog and the Federal Clean Air Act Amendments of 1990

The Federal Clean Air Act Amendments of 1990 require the states to implement numerous programs to combat ground-level ozone, also known as summertime “smog.” Ground-level ozone is known to irritate the nose, throat and lungs, to reduce lung function, and to trigger acute asthma attacks. Active children and adults, and people with respiratory disease such as asthma are at the greatest risk of adverse health effects. Long-term exposure may permanently damage the lungs. In New Hampshire, federal health standards from ground level ozone had been exceeded in portions of Merrimack, Strafford, Rockingham, and Hillsborough counties.

Ground-level ozone, unlike other pollutants, is not emitted directly into the atmosphere by a particular source. It is formed when volatile organic compounds (VOCs), chemically react with nitrogen oxides (NOx). Sunlight and heat stimulate the process and therefore the highest levels of ozone occur in the summer months. Gasoline vapors contain VOCs that contribute to the formation of ground-level ozone. In addition, gasoline vapors contain many other toxic substances, including benzene, a known carcinogen.

The Clean Air Act Amendments of 1990 made the control of VOC emissions a top priority. Distribution and marketing of gasoline is one of the largest single categories of sources of VOC emissions in New Hampshire. If left uncontrolled, as much as eleven pounds of VOCs can be released for every 1,000 gallons of gasoline during fuel transfers. Considering over 700 million gallons of gasoline were distributed in New Hampshire in 2011, the control of these emissions is of significant importance. New Hampshire requires stage I vapor recovery systems to capture vapors from underground storage tanks during bulk gasoline transfers. When properly installed, operated and maintained, these systems can reduce VOC emissions by 95 percent or more.

Stage II vapor recovery systems capture vapors that escape during the refueling of motor vehicles; however, since 2000, all new light-duty vehicles sold must be equipped with onboard refueling vapor recovery (ORVR) systems. As the vehicle fleet in New Hampshire turns over, an increasing amount of vehicles have ORVR systems, diminishing the effectiveness of Stage II. Therefore, NHDES no longer requires stage II vapor recovery systems at gas dispensing facilities. Existing stage II systems must be operated in accordance with Env-Or 500 until they

are decommissioned, which must occur by December 22, 2015. Guidelines regarding these changes can be found at

<http://des.nh.gov/organization/divisions/waste/orcb/ocs/ustp/documents/stage-ii-decomm-guide.pdf>.

What Is a Stage I Gasoline Vapor Recovery System?

Stage I gasoline vapor recovery systems capture the vapors expelled from underground storage tanks when they are being refilled and return them back to the tank truck. These systems not only reduce air pollution, they also save money by conserving gasoline that would be lost into the air and protect public health by reducing inhalation of toxic gasoline vapors.

NHDES Waste Management Division is responsible for implementing stage I vapor recovery programs under state regulations Env-Or 504. Approximately 1,000 gasoline stations statewide are subject to stage I requirements because they have a storage tank capacity of 1,100 gallons or more.

In addition to the required triennial tests, NHDES staff inspects all underground as well as aboveground gasoline facilities at least once every three years for compliance with the NHDES vapor recovery regulations. NHDES pursues enforcement actions against facilities unwilling to comply with the vapor recovery requirements. Enforcement activities focus primarily on those facilities that have expired certifications or fail to maintain their equipment.

For additional information on ground-level ozone, please contact the NHDES Air Resources Division at (603) 271-1370, or for information on stage I and stage II gasoline vapor recovery systems, please contact the Waste Management Division at (603) 271-3899.