NCDENR
Division of Air Quality
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TOXIC AIR POLLUTANTS – QUESTIONS AND ANSWERS

1. Question: What toxic air pollutants are emitted in North Carolina, where and in what amounts?

   Answer: Attachment 1 lists the North Carolina sources required to report their toxic air emissions and the amount emitted each year in order from the largest to the smallest. Toxic air emissions reported by the companies in 2009 total approximately 38 million pounds per year. Attachment 2 lists the pollutants emitted that are regulated under both the state and federal programs and the amount emitted in order from largest to the smallest for 2009. Attachment 3 is a chart showing the relative contribution to total toxic air emissions by industry sector. Attachment 4 shows the toxic air pollutants emitted by four different industrial sectors. Both charts are based on 2009 data.

2. Question: How are these numbers calculated and who makes the calculations?

   Answer: The numbers come from the companies and are based on either actual monitoring of emissions or a calculation based on type of fuel, combustion process, total solvent used, etc.

3. Question: How does the 38 million pounds per year of toxic air pollution in North Carolina compare to other states?

   Answer: Based on emissions reported to EPA in 2009, North Carolina has the tenth highest level of toxic air pollution emissions in the United States. Note: Information in the September 28, 2011 DAQ presentation should be clarified to state that N.C. has the 4th highest level of toxic air emissions <u>from chemical industry sources.</u>

4. Question: What are the global emissions of toxic air pollutants?

   Answer: We don't have access to actual numbers, particularly for sources in countries like China that do not make pollution information publicly available. It is important to remember that toxic air pollution is basically a local problem with local impacts. Ammonia from sources in China, for example, does not affect North Carolina communities.

5. Question: What percentage of toxic air pollutants come from wildfires (such as the Great Dismal Swamp fire) or from automobiles?

   Answer: Based on EPA estimates for mobile sources, over 89 million pounds of toxic air pollutants were released from cars and trucks on North Carolina roads in 2008. This amount represents 65 percent of the total toxic air emissions. Forest fires and other nonpoint categories (such as farms) accounted for over 9 million pounds of toxic air emissions, or 7 percent of the

total toxic air emissions that same year. The industrial sector accounted for the remaining 28 percent of toxic air emissions in North Carolina in 2008.

6. Questions: What are some examples of small sources of toxic air pollutants?

   Answer: Asphalt plants, concrete batch plants, small furniture manufacturing plants, small wood products companies, wastewater treatment plants.

7. Are automobile manufacturers and tire recappers heavy polluters?

   Answer: DAQ looked at EPA air pollution data for the BMW plant in Greenville, South Carolina and found that the company emitted 76,951 pounds of toxic air emissions in 2008. When the plant was originally permitted by S.C. in the early 1990's, the company had to demonstrate compliance with South Carolina air toxics standards at the property line. Note: South Carolina excludes from state review any individual pollution source subject to a federal technology standard, but only with respect to the toxic air pollutants actually addressed by the federal standard. Since South Carolina regulates 79 toxic air pollutants that are not covered by the federal program, it still reviews even those individual sources for compliance with state standards for state-regulated pollutants.

   There are six tire retread facilities operating in North Carolina. Collectively, the six facilities emitted approximately 22,517 pounds of toxic air pollutants in 2009. Two facilities have never modified and therefore have not been required to perform an air toxics assessment. Each of the other four facilities has assessed air toxics emissions; only one facility needed to do modeling and then take measures to reduce emissions at the property boundary.

8. Question: What air toxics come specifically from agriculture?

   Answer: Agricultural operations can be sources of toxic air pollutants, but agriculture generally is not regulated under the Clean Air Act or under North Carolina's air quality program. An agricultural activity would only be regulated if it had an emissions source similar to a source found at an industrial facility. A traditional agricultural activity– such as a large poultry farm– does not require an air quality permit even though the farm produces a large amount of a toxic air pollutant (ammonia) regulated under the state program.

9. Question: Which toxic air pollutants are regulated by the North Carolina program, but not the federal program?

   Answer: Attachment 5 lists all of the toxic air pollutants regulated by the North Carolina program, the South Carolina program and the federal program. The 21 toxic air pollutants regulated under the North Carolina program, but not the federal program have been highlighted in yellow. Note that S.C. actually regulates 79 toxic air pollutants that are not regulated under the federal program; Virginia only regulates the toxic air pollutants that are covered by the federal program.

10. Question: Doesn't EPA take public health into consideration in adopting the federal standards?

    Answer: When EPA adopts a standard for toxic air emissions from a particular type of source, the standard is based on the kind of air pollution control technology that is most effective in removing the pollutants of concern at that kind of source. Under the federal program, the emissions limit is based on how much pollution the technology can remove – not a public health standard. Technology drives the initial federal standard; the Clean Air Act then requires EPA to review how well the technology is protecting public health within eight years after the standard is set.

11. Question: What are public health conditions in North Carolina as compared to other states?

    Answer: In terms of air toxics, the impacts would be more local than statewide. To do a true comparison, it would be necessary to compare areas in North Carolina that have facilities regulated only by the state program as compared to areas with similar facilities in other states that do not go beyond federal air toxics requirements.

12. Question: How do we know that the North Carolina program is effective? How much reduction in toxic air emissions has the state seen as a result of the program? What were the emissions figures twenty years ago?

    Answer: Attachment 6 shows the reduction in reported toxic air emissions in North Carolina since 1998. There has been a steady decline; emissions reported in 2009 were about 1/3 the levels reported in 1998. Note: After a steady decline in toxic air emissions from 1990 to 1998, the numbers bumped up when federal rules changed to require emissions reporting by several categories of sources that had not been required to report before. The new categories included: electrical utilities that combust coal and/or oil, hazardous waste treatment and disposal facilities, chemical wholesale distributors, solvent recovery services, petroleum bulk stations and terminals, and metal and coal mining. In 1990 (when the State program went into effect), N.C. sources reported emissions of toxic air pollutants totaling approximately 95 million pounds. As a result of the expanded reporting requirement, the number reached a high of approximately 132 million pounds per year in 2000 before again beginning a steady decline to the 2009 level of 38 million pounds per year.

13. Question: Do air pollution controls installed for other purposes also reduce emissions of toxic air pollutants?

    Answer: Some pollution controls installed to meet other requirements of the Clean Air Act also reduce emissions of one or more toxic air pollutants. For example, the combination of a selective catalytic reduction control device to reduce nitrogen oxide emissions and a scrubber to control SO2 emissions installed on a coal-fired power plant can also reduce mercury emissions. If a pollution control installed for other reasons also reduces toxic air emissions enough to meet

the health-based standard at the property line, the facility does not need to do anything else to comply with state air toxics rules.

14. Question: Does the state program regulate the level of air toxics at the property line or at the fence line?

    Answer: Emissions of air toxics must meet the state health-based standard at the property line.

15. Question: Does the requirement to meet an air quality standard at the property line disadvantage facilities located on smaller properties?

    Answer: It really depends on the type of facility and how it operates. The need to control toxic air emissions can certainly be greater, since a facility on a small property may be located much closer to other businesses and even residences where people will be exposed to the emissions.

16. Question: How expensive is it to do the air quality modeling required by the state program?

    Answer: Modeling costs depend on the type of modeling needed for a given facility. A simple source screening model costs in the range of $1500-$2500. Refined modeling for a simple source can cost in the range of $3000 to $6000. Refined modeling for a complex source can cost in the range of $10,000 to $20,000.

17. Question: What are the disadvantages of the state program?

    Answer: Industry has expressed concern about the potential need to do modeling for a facility modification that increases emissions of toxic air pollutants. (Modeling would be required if the increase exceeded a threshold level set in state rules.) There is also concern about the Environmental Management Commission's decision to amend the state air toxics rules to remove an exemption for new or modified combustion sources (such as boilers). With the exemption removed, these new or modified sources must comply with the state program in the same way other regulated sources of toxic air emissions do. A related concern is that large combustion sources (those emitting more than 10 tons per year of one federally-regulated toxic air pollutant or more than 25 tons per year of a combination of those pollutants), may need to meet state air toxics standards before EPA finalizes the federal technology standard for those industrial boilers. Note: The Environmental Management Commission removed the previous exemption for boilers largely because the federal standards had been repeatedly delayed -- leaving these sources unregulated under either the state or federal air toxics program. The proposed federal standard for large industrial boilers is still stayed and it is unclear when that standard will become final.

    We may need more information from industry to have a complete understanding of the concerns about North Carolina's air toxics program.

18. Question: Why is a facility regulated under the state program and federal program?

    Answer: The federal standard may not address all of the sources of toxic air pollutants located at the facility or all of the toxic air pollutants produced at the facility. Unlike the federal program, the state program looks at the cumulative toxic air emissions from all sources at the facility. The state and federal programs also approach protection of public health differently. The federal program is built on the idea of picking a pollution control technology that is most effective at removing a particular pollutant and then assessing any remaining public health risk several years later. Since the federal program is technology-based, it does not take into consideration other operating or design changes that could further reduce toxic air emissions. The state program evaluates actual toxic air emissions at the property boundary –where those emissions affect other businesses and residences. Sometimes installing the technology required under the federal rule allows the facility to meet the health-based standard at the property boundary, the state program does not require any further action. Other times those levels exceed the public health standard at the property boundary even after the facility has installed technology required under the federal rule; in those cases, the state program works with the industry to identify other measures that can lower the level of toxic air pollutants.

19. Question: How is the state program implemented and federal program implemented?

    Answer: The state program requires an air quality permit if a facility's total emissions of state-regulated toxic air pollutants exceed a certain threshold level. Then, the facility is required to determine whether those emissions will meet the state health-based standards at the property line. If one or more federal standards for toxic air emissions apply to the facility, the state does not require that evaluation until after the facility has complied with all federal requirements.

    EPA has implemented the federal program by identifying the toxic air pollutants of greatest concern and then adopting a technology standard for the largest industry sources of those pollutants on a national basis. Although EPA has listed 187 toxic air pollutants in the federal rules, the federal program does not regulate all sources of those pollutants – only the sources that represent the highest priority nationally. As a result, a number of the federal rules related to toxic air pollutants establish standards for facilities that do not exist in North Carolina (such as oil refineries). On the other hand, the rules do not address facilities that are of local or regional concern but have not risen to the level of being a national priority.

Additional Information provided in the packet:

- State Air Toxics Rules: Attachment 7
- Federal Air Toxics Rules that Apply to Facilities in North Carolina: Attachment 8
- Executive Order for the State Air Toxics Program: Attachment 9