

Air Quality Task Force

Joint Fact Finding

Subcommittee

May 9, 2012

Subcommittee Activity

- Members
 - Hank Williams
 - Rod Rozier
 - Tom Monahan
 - Carmel Kail
 - Craig Brown
- Scientific Advisor Reviews
 - Dr Field
 - Dr Seinfeld
- Needed Information
 - Background
 - Emissions characterization
 - Monitoring
 - Modeling
 - Health
 - Regulatory
 - Miscellaneous Reduction Efforts
 - Background on Oil and Gas Industry

Key Points – Executive Summary

- The Issue – Why We are Here
 - Periodic winter time ozone levels exceed EPA 2008 Standard of 0.075 ppm
 - The Upper Green River Basin (UGRB) (Sublette and parts of Lincoln and Sweetwater Counties) has been designated by EPA to be in ozone non-attainment at marginal level
 - The citizens of the nonattainment area and State of Wyoming expect the ozone standard to be met
 - The citizens of the nonattainment area and the State of Wyoming receive over \$18 Billion in economic output employing over 20% of the state's workforce.
- Emissions Inventories – Understand the Emission Sources
 - Emission Inventories are detailed estimates developed based on a set of rules that were developed by WDEQ
 - Emission inventories are living programs that change as new information become available, thus calculation methodology and underlying baseline may change
- UGRB Emissions – Focus on Largest Sources
 - Oil and Gas account for 60% of NO_x and ~94% of VOC emissions, while vehicles account for 7% of NO_x and less than 1% VOC.
 - About 6000 producing O&G wells of which about half were permitted prior to 2001 BACT changes
 - Eight Major sources (compressors stations)
 - 2011 WDEQ Emissions Inventory – about 5,000 tpy NO_x and 18,000 tpy VOC attributed to Oil and Gas
 - Relative to the JPDA and non-JPDA, NO_x is greater in JPDA while VOC is greater in non-JPDA, based on 2010 winter inventory
- Monitoring – Confirming Inventories
 - Monitoring Stations placed based on EPA guidance
 - Monitoring stations and trajectory models indicate that advection of precursors from sources out of the basin are not contributing to ozone formation.
 - Mobile monitoring has been employed for local study

Key Points – Executive Summary

- Modeling – Predicting the Outcomes of Change
 - Photochemical Box Modeling work to date has found the UGRB situation to be extremely complicated, with some times and places being NO_x-limited, other times and/or places VOC-limited.
 - Extremely complicated atmospheric chemistry, contribution of climatic inversions and impacts of snow cover in ozone formation will require further understanding
 - There is debate whether ozone is VOC limited or NO_x limited
- Health – Human and Environmental Impacts
 - Health effects of ozone well understood, EPA and others have significant resources for review
 - Screening study suggested health impacts of toxic air contaminants in population centers in UGRB to be significantly lower than risks found in most urban and rural areas.
 - Epidemiology study commissioned and in progress by WDOH looking at correlation between high ozone days and respiratory illness
- Regulatory –WDEQ Actions
 - Nonattainment Designation
 - Presumptive BACT reducing VOC and NO_x
 - Drilling rig engines limiting NO_x
 - Offset Program maintaining emission levels while allowing development
 - Recognize that existing facilities have limited regulatory
- Miscellaneous Reduction Efforts – Working together WDEQ and Industry
 - Ozone Contingency Plan industry efforts to curtail emissions on Ozone Action Days
 - WDEQ Compliance efforts
- Future Plans –Accommodate New Sources and Meet Goals
 - Future approved and proposed development may add up ~7800 wells in next 15 years