



## Uintah Basin 2013 Winter Ozone Study and Mitigation

NATURAL RESOURCES, AGRICULTURE, AND ENVIRONMENT

Thursday, February 14, 2013 8:00 a.m.

25 House Building

The Department of Environmental Quality (DEQ) continues to work proactively and collaboratively with industry and government partners to solve Uintah Basin's unusual, high winter ozone problem. These partners recognize it is important to address this issue because of the negative effects of ozone on human health and the environment. They also recognize that it is important to find solutions that are appropriate for the Basin's unique ozone situation and local community.



**Background** – Ozone is not emitted directly as a pollutant but is formed chemically in the atmosphere through photochemical reactions of volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>). In order to find effective pollution controls scientists are working to solve the Basin's complex ozone chemistry problem.

A multi-phased study began in winter of 2011-2012 to initiate this work. Phase I of the study gathered data that will be used to establish emissions inventories and baseline ozone conditions. Phase II of the study (taking place this winter) is designed to capture atmospheric chemistry data under high ozone formation conditions.

Phase I Interim Findings conclude:

- Snow cover, strong temperature inversions, and sunny skies are needed for ozone to form, build, and exceed the standard;
- VOC readings were highest in gas producing areas and lower in oil producing and population centers;
- NO<sub>x</sub> levels were highest in population centers, lower in gas producing areas, and lowest in oil producing areas.
- Methanol was measured at concentrations that could significantly enhance ozone formation.

**2013 Winter Ozone Study** – This year's study is working to:

- Determine ozone sensitivity to VOC, NO<sub>x</sub>, and the Basin's unique winter photochemistry conditions;
- Continue to improve inventories using equipment emissions ratings, modeled emissions estimates, and actual source emissions testing;
- Develop a model to evaluate effectiveness of VOC and NO<sub>x</sub> mitigation;
- Continue evaluating of trends in ozone, VOC, and NO<sub>x</sub> in the Basin over time.

In addition to continued use of tethered balloons, a new tool will be deployed this year to study ozone formation in the atmosphere. The National Oceanic and Atmospheric

Administration is providing an aircraft to gather data that will be used to enhance understanding of the Basin-wide distribution of ozone, VOC and NO<sub>x</sub> emissions. Ozone and Doppler LIDAR, which provide three-dimensional measurements of ozone and winds in the atmosphere, will also be used.

**Proactive Problem Solving** – Leaders from DEQ and the Division of Air Quality continue to work closely with local officials as well as the energy industry on efforts to begin reducing emissions immediately. In addition to health benefits, early emissions reductions may result in credits for industry. Participation in the Environmental Protection Agency’s Ozone Advance program is also ongoing. DEQ’s Planning and Public Affairs staff is developing best management practice guidelines for the oil and gas industry and working to improve outreach and communications to affected businesses and the community.

Links to more information:

- All things related to the ozone study and mitigation work in the Basin: <http://www.deq.utah.gov/locations/uintahbasin/index.htm>
- Ozone Advance Presentation to Utah Air Quality Board: [http://www.airquality.utah.gov/Air-Quality-Board/Packets/2012/May/ITEM\\_VIb\\_OzoneAdvance.pdf](http://www.airquality.utah.gov/Air-Quality-Board/Packets/2012/May/ITEM_VIb_OzoneAdvance.pdf)
- More on Ozone Advance: <http://www.deq.utah.gov/Newsletter/pastissues/2012/novdec2012.pdf>
- Current Uintah County Forecast: <http://www.airquality.utah.gov/aqp/v1.html>
- Current Duchesne County Forecast: <http://www.airquality.utah.gov/aqp/rs.html>

Questions? Please call Brock LeBaron at 801-536-4006 or [blebaron@utah.gov](mailto:blebaron@utah.gov).

