

## CASPER STAR TRIBUNE

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### What happens when the dust settles?

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PINEDALE -- Local seventh-graders Jayne Thompson and Amy David wanted to know one thing about air quality in the region when they began their science fair project earlier this year.

With the drought, all the dirt roads and all of the increased traffic in the Jonah and Anticline natural gas fields in southwest Wyoming's Sublette County, the pair wondered what was going to happen "when the dust settles."

So they set up an experiment designed to compare the reflectivity and melting rates of clean snow and ice vs. dust-laden snow and ice. The pair used ice cubes in an indoor lab and ice blocks and snow pots outdoors.

"We found dust-loaded ice and snow had lower reflectivity and a higher melting rate than the clean snow ... so now we know what happens with the dust settles," Thompson told participants in Thursday night's Air Quality Forum sponsored by the Upper Green River Valley Coalition and the Wyoming Outdoor Council.

Though simplified, the students' question cut to the heart of the air quality issue: What is the effect going to be on air quality, visibility and remote mountain lakes in the Wind River Range from increased oil and gas drilling?

State air quality officials said expanded air quality monitoring and completion of a statewide emission inventory are good first steps to finding out if there is a serious air quality problem in southwest Wyoming.

"Quite frankly, nobody up here including me ... can calculate and answer the question of whether there is a problem," said Dan Olson, head of the Wyoming Department of Environmental Quality's Air Quality Division.

"When we get to the point where we can answer that question with data ... and if there is a problem, then we'll have the information to know what to do about it," he said. "Once we know where we're at today and how we got here ... then we can model and monitor to get to where we want to be in the future."

Olson said the "comprehensive statewide inventory" of emissions will include a closer look at southwest Wyoming's growing industrial sources. The inventory is expected to be completed by the end of the year.

He noted that the state historically has required significant monitoring of industrial activity in southwest Wyoming, such as gas plants, power plants and the soda ash plants in the Green River Basin. But the current energy boom is also bringing smaller, more numerous emission sources such as trucks, oil and gas diesel rigs, new pipelines, off-road vehicles, and increased road traffic in the area, among others.

"We're currently in a significant expansion here ... with several thousand wells over several thousand miles ... and we've got lots of small (emission) sources spread out over a real large area, and we'll need different monitoring strategies," Olson said.

The statewide emission inventory "has never been done before by any state in any place," he noted.

### **Incredibly special**

County residents are becoming increasingly concerned about the loss of air quality and impacts to visibility brought about by a boom in energy development in the Upper Green River Valley, said coalition community organizer Linda Baker.

"This place is incredibly special... The air quality in the Upper Green River Valley is the cleanest in the lower 49 states, is as clean as central Alaska, and is almost as clean as central Tibet ... which scientists say has the cleanest air in the world," Baker said.

Oil and gas activities in the Pinedale Anticline fields and the nearby Jonah field release hundreds of tons per year of nitrous oxide and other industrial pollutants into the pristine air above the Upper Green River Valley in southwest Wyoming, according to federal and state agencies.

A major source of emissions is the 28,000-acre Jonah field located about 32 miles southeast of Pinedale and 28 miles northwest of Farson. The field is slated for a major "infill" drilling project under a Bureau of Land Management plan that could add up to 3,100 new wells over the next decade or so.

Olson said the statewide inventory of all pollutants and sources will be the basis for future air quality monitoring in southwest Wyoming.

The study will look at air quality in an area defined by 300-kilometer circle marked by concentric, 50-kilometer rings. The center of the ring would be located within the Bridger and Fitzpatrick wilderness areas in the Wind River Range, according to plans.

"We'll look at all sources within those rings ... and for those outside 200- to 300-kilometer rings, outside sources from Colorado, Utah, Idaho and Montana will have to be factored into the study," he said.

### **Monitoring**

As part of the inventory, DEQ will add a monitoring station near Wamsutter and a station near South Pass, according to plans. The agency already operates a monitoring station in Pinedale and is considering future stations in the Wyoming Range and in Uinta County, he said.

The stations monitor current air quality conditions by measuring such components as the amount of pollutants released over time (emissions), the volume of pollutants (concentration), the ability to see color and texture over distance (visibility), and how air pollutants are removed and deposited on the ground and in water (deposition).

Tom Darin with the Jackson Hole Conservation Alliance wondered if it might be better to wait on the new inventory and new monitoring data before projects such as the Jonah infill project are permitted by federal agencies.

"I would think it would be best to have that information in place before permitting a massive infill project like this," Darin said.

### **Nuclear worries**

Pinedale resident Sally Mackey urged officials to listen to residents' concerns about air quality issues. She noted decisions made now about oil and gas development could have unknown, long-term impacts on air quality in the region.

She recounted how area residents successfully mobilized in 1969 to stop a proposal by El Paso Natural Gas and the Atomic Energy Commission to use nuclear devices to crack into natural gas reserves trapped in dense underground rock formations and stimulate the flow of gas.

The proposal came shortly after the Atomic Energy Commission and a Texas oil company detonated a 40-kiloton nuclear device inside an 8,000-foot shaft on Colorado's energy-rich Western Slope in early 1969. The experiment had mixed results, according to records. The gas rushed to the surface, but was too radioactive for commercial use.

Mackey said in 1969, El Paso drilled Wagon Wheel Well 1 at a site 14 miles south of Pinedale to a depth of 19,000 feet. She said the company wanted to fracture the well using five 100-kiloton nuclear devices that would be detonated sequentially. But a group of Pinedale citizens, alarmed by the proposal, worked to halt the project.

"What that (detonation) might have done to this area and the gas fields around here ... we have no idea what the results might have been with all that radioactive gas," she said.

"The developers of these fields and the government agencies should also listen to our concerns now about air quality... It's very important that you do (in light of) what could have happened and the magnitude of what could have happened" with a nuclear detonation, she said.