



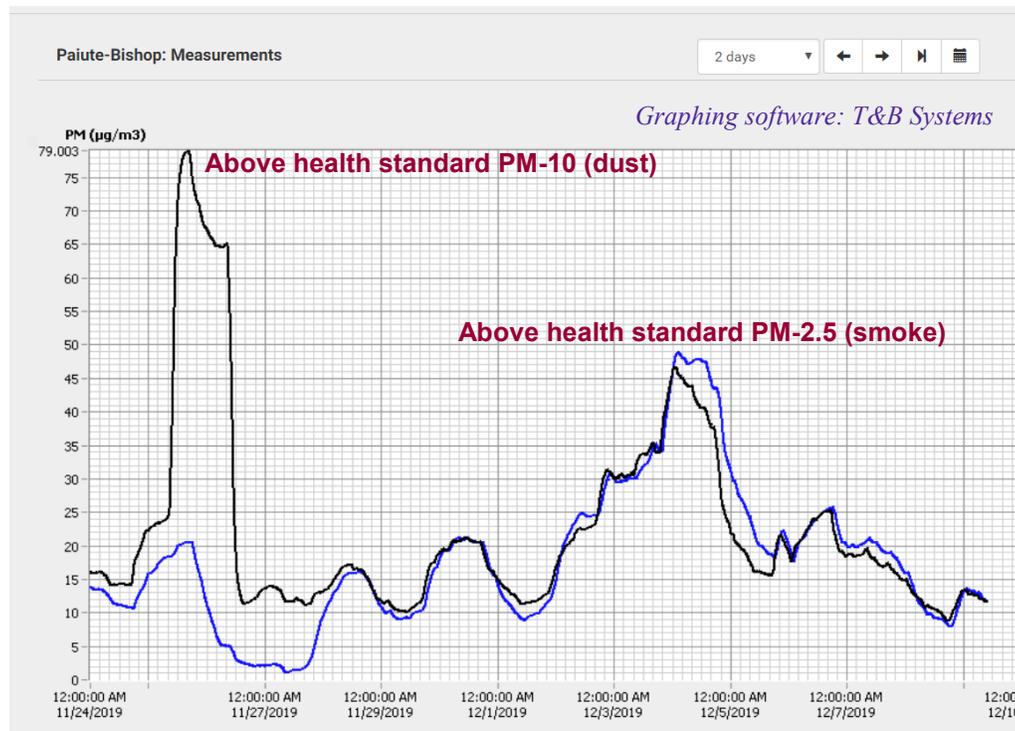
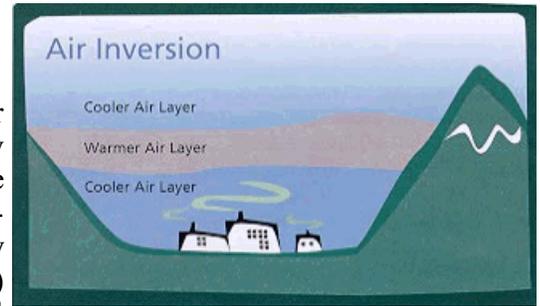
FROM THE AIR PROGRAM

Winter Air Quality

Winter has arrived, bringing snow, winds and rain with pacific storms, and also a winter inversion pattern. All can be seen in measurements from the tribal weather station.

Particulate Matter

On cold, calm nights, smoke from home heating can be a factor of pollution in the Owens Valley. Smoke is often approximated by measuring PM-2.5, particles under 2.5 microns in diameter. The combined effects of wood smoke, and the valley air stability patterns in winter (when cold, dense air becomes trapped in the valley below a layer of warmer air, trapping household fire smoke with it) can be seen outside, and by looking at levels measured by the Tribal air monitors. This smoke appears at grey or black soot in the monitor filters.



The graph shows particulate levels from before Thanksgiving to 12/10, as recorded by the Air Program's monitors at the EMO-A building. The scale is in micrograms/cubic meter, and the Tribal health standards are **50 for PM-10** and **35 for PM-2.5** respectively, per 24 hours, *midnight to midnight*. The **black lines are PM-10 24-hr concentrations**, which is overall smoke and dust up to that size. The **blue lines are PM-2.5 24-hr concentrations**, which can be used to approximate smoke. When the lines meet or cross, it means that most if not all the particulates are <2.5 micron in diameter and so most likely smoke.

PM-2.5 tracks closely with PM-10 because much of what both stations are measuring lately is smoke. An exception was on 11/25 when the station captured wind gusts over 52 mph, and PM-10 concentrations exceeding the Tribal 24-hour standard (67.57 ug/m³ recorded average) were likely due to dust blowing with the approaching storm front. Some PM-10 is also generated during residential woodstove fires or backyard burning, especially when combustion is just getting under way or throws ashes.

On 12/3, the Tribal 24-hour standard for PM-2.5 was exceeded, which in recent years, typically happens only during wildfire smoke impacts, though regular concentrations of nighttime winter particulates are significant by their frequency and values being high relative to other seasons. The max concentration of 121.21 ug/m³ occurred during the 7 pm hour on 12/3, followed by more hours of high concentrations. (*Note: the graph displays rolling 24-hour averages (48.9 ug/m³), so the *midnight to midnight* average discussed is not shown exactly). During this time, temperatures were above freezing in the 30's, and either still wind conditions or mostly NNW breezes.

Precipitation

During 11/25 to 11/27, a back-to-back system of pacific storms brought approximately 6 inches of snow-fall to the reservation, and anywhere up to 1.2" of melted precipitation near Bishop, depending on exact location and method of measurement.