

FAQ: Particulate Matter Air Monitoring

July 2011

What is air quality monitoring?

Air quality monitoring tests the air for a variety of pollutants. Which pollutants are monitored depends on local concerns and characteristics. For example, the Eagle River area was previously identified as a nonattainment area for fugitive dust because of the many unpaved roads. Right now in Fairbanks, particulate matter is a concern because emissions accumulate during air/weather inversions.

How do monitors measure air quality?

Monitors are specific to the type of pollutant being measured. Particulate matter monitors typically use a vacuum to draw a known quantity of air through a filter over a set period of time. The filter is then analyzed to determine the quantity of pollutant present in the air.

Additional laboratory analysis is required to identify the type of particulate matter, for example glacial dust or coal dust. Because DEC's concern, initially, is ensuring that pollutant levels remain below established standards, we typically do not do this type of analysis.

What happens to the information from air monitoring?

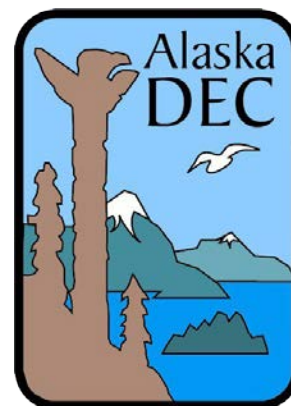
To who is it reported?

DEC collects the results from state-owned monitors. For some of the sampling sites, near real-time data are available in hourly increments at <https://fortress.wa.gov/ecy/aaqm/Default.htm>. Other monitors sample less frequently, and DEC publishes the results as they are available.

In addition, monitors are used to help determine when the air quality is poor so that the public can be notified to take appropriate precautions. This information comes from permanent monitors and is shared with the media when there are air quality concerns.

How are violations of air quality standards determined?

The standard for each pollutant specifies how violations are determined. Fugitive dust is monitored as particulate matter that is smaller than 10 microns (PM₁₀) and compared against a 24-hour standard. Depending on the meter type, the air is sampled for 24 hours and compared to the standard or sampled hourly and



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averaged. Monitored PM₁₀ values may not exceed the standard more than once per year on average over three years. This methodology means that although a single day can have an average above the standard, over three years no more than three days may exceed the standard.

How does DEC decide where to put an air quality monitor?

DEC monitors air quality in accordance with requirements set by the US Environmental Protection Agency (EPA). DEC focuses its monitoring efforts in larger communities to cover the largest possible population exposure, with additional monitors in representative smaller towns and villages. In addition, DEC places monitors in response to air quality concerns, which may arise from local topography, potential sources, and meteorology. Specific sites are identified based on federal standards and chosen in conjunction with local jurisdictions. The number of monitors is limited due to funding and staff time.

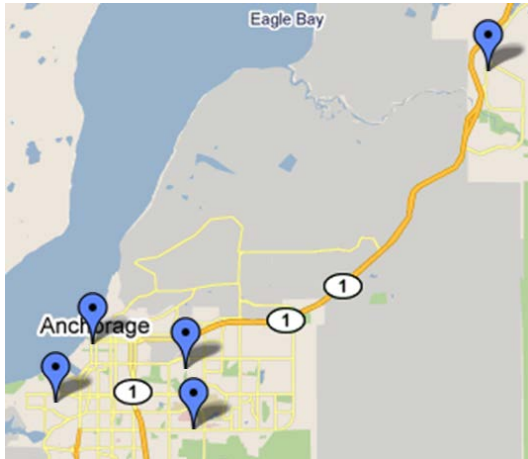
Where are monitors in Alaska?

DEC air quality monitors operate throughout the state. Some monitors are permanent and some are put up for a limited period of time. The table below shows what pollutants each monitor records. The maps on the next page show the locations of the current monitors in Alaska. Additional information is available in the Alaska State Air Quality Monitoring Plan (available at: http://www.dec.state.ak.us/air/am/am_airmonplan.htm). In addition to the monitors identified below, DEC is currently monitoring summer emissions in several rural villages.

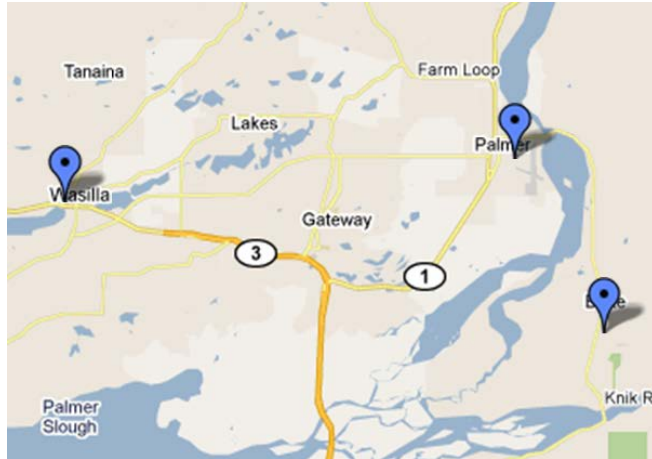
Permanent Monitor Locations

Area	Monitor Site	PM _{2.5}	PM ₁₀	CO	Ozone	Lead	Black Carbon
Anchorage	DHHS	X	X	X			
Anchorage	Garden	X	X	X	x		
Anchorage	Tudor		X				
Anchorage	Turnagain			X			
Eagle River	Parkgate	X	X	X			
Mat-Su Valley	Harrison Court	X	X				
Mat-Su Valley	Palmer	X	X				
Mat-Su Valley	Wasilla	X	X		X		
Fairbanks	NCore	X					
Fairbanks	Old Post Office			X			
Fairbanks	State Office Building	X					
Fairbanks	TAC (Peger Road)	X					X
North Pole	Elementary School	X					X
Juneau	Floyd Dryden	X	X				
Noatak	Noatak					X	
Seward	Library		X				
Seward	Ballaine Boulevard		X				

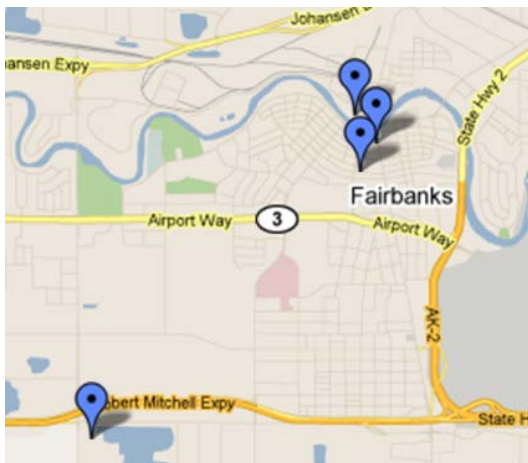
Anchorage Area Monitor Locations



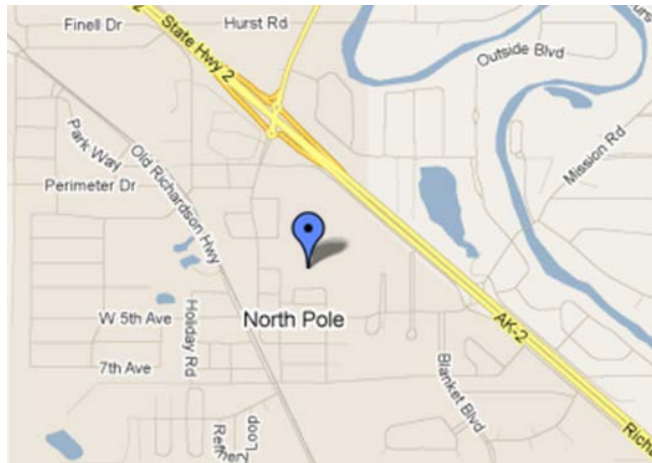
Mat-Su Valley Monitor Locations



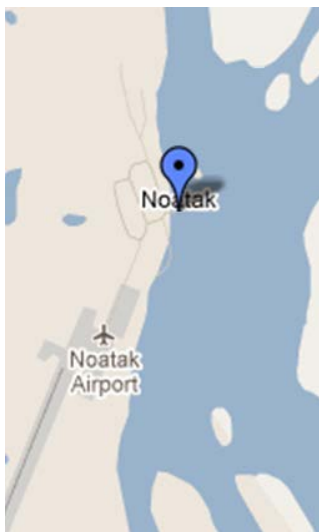
Fairbanks Monitor Locations



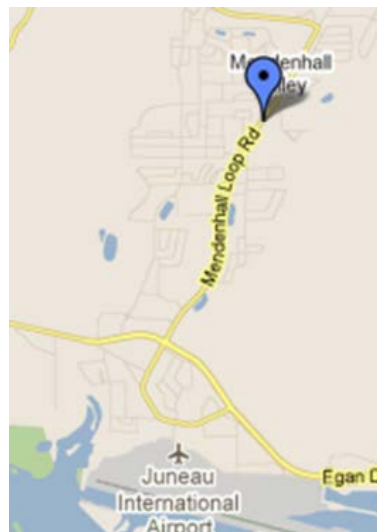
North Pole Monitor Location



Noatak



Juneau Monitor Locations



Seward Monitor Locations

