

North Idaho Air Quality Summary – December 2013

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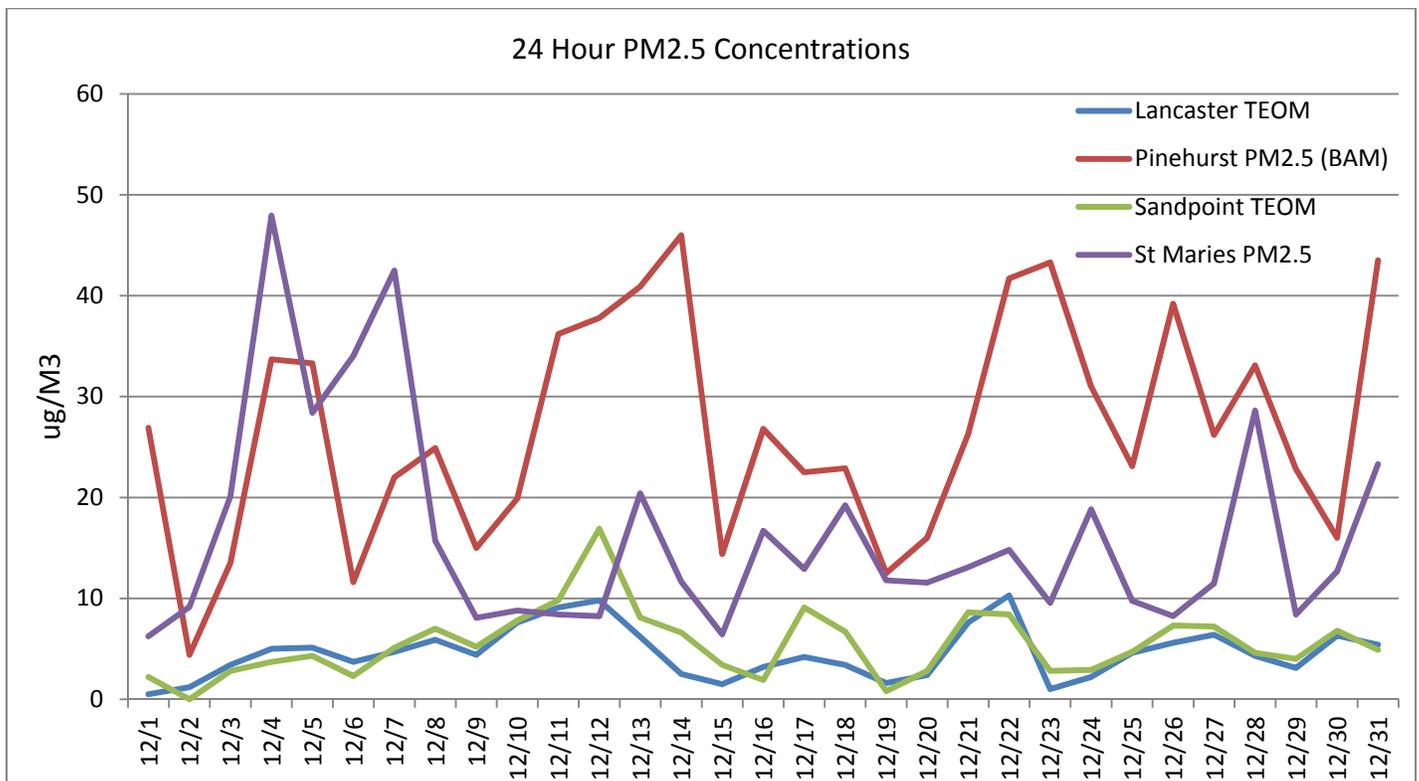
This summary of North Idaho's air quality is compiled from the various air quality samplers located in the Department of Environmental Quality's Coeur d'Alene Region for the month of December 2013.

The Coeur d'Alene Regional Network encompasses the counties of Boundary, Bonner, Kootenai, Shoshone, and Benewah. The data presented in this report is considered preliminary data and has not been completely evaluated for all quality assurance requirements.

PM2.5 CONTINUOUS DATA

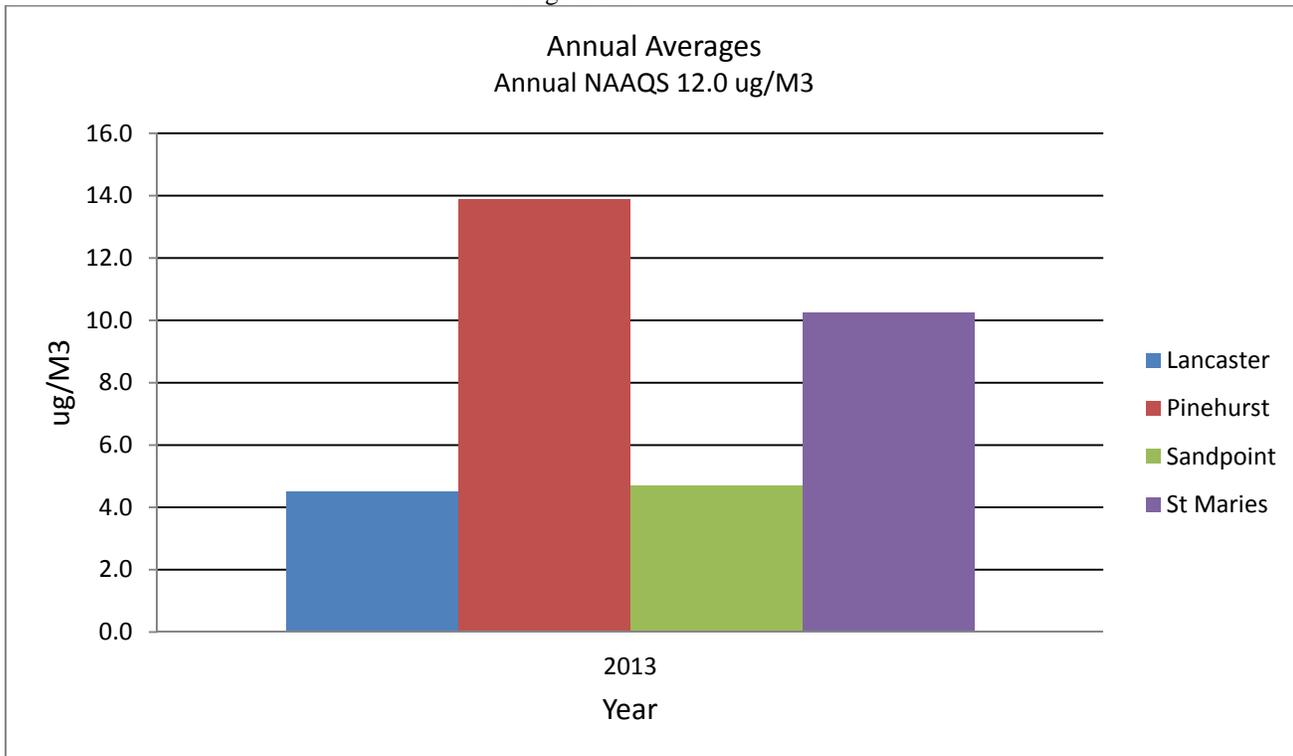
The graph below displays the average daily 24-hour PM_{2.5} values for the month and is expressed in micrograms per cubic meter, ($\mu\text{g}/\text{m}^3$). These values were calculated by averaging hourly values midnight to midnight from the agency's PM_{2.5} TEOM and BAM samplers located in the Cities of Pinehurst, Sandpoint, and St. Maries and on Lancaster Road in Kootenai County.

In March 2013 the US EPA revised the PM_{2.5} NAAQS by lowering the annual standard to 12 $\mu\text{g}/\text{M}^3$ from 15 $\mu\text{g}/\text{M}^3$. The 24 hour NAAQS remains at 35 $\mu\text{g}/\text{M}^3$.



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The chart above shows the annual averages for each site. This is preliminary data and is subject to change.

The BAM at the Pinehurst site is being evaluated for use as a continuous FEM for the site. It is currently being run side by side with the 8500 FDMS at the site. The results from the two continuous FEM monitors will be compared to the filter based FRM data. Once there is enough data, the data comparisons will be evaluated and the FEM that is most like the FRM will remain at the site.

A BAM was installed in St Maries as a replacement for the 1405F TEOM. The TEOM had experienced another in a series of breakdowns and was returned to the company for testing. The BAM in St Maries will be categorized as a special use monitor and used for AQI forecasts. The St Maries FRM will continue to be used for NAAQS determinations. The BAM will be evaluated against the FRM data and may be categorized as a continuous FEM at some time in the future.

The table below shows the maximum 24 hour values calculated from continuous TEOM and BAM monitoring for this reporting period. The National Ambient Air Quality Standard (NAAQS) for PM_{2.5} is 35 µg/m³ for a 24 hour average. Recently, the U.S. EPA approved the TEOM-FDMS as a Federal Equivalent Method (FEM) for the collection and reporting of PM_{2.5} data. In January 2011 the Coeur d'Alene Regional Office (CRO) began using a TEOM-FDMS equivalent method for NAAQS reporting from the Pinehurst monitoring station. The CRO still uses the Federal Reference Method (FRM) filter based sample measurements at the St. Maries monitoring site to determine NAAQS compliance. Depiction of preliminary continuous monitoring data in the table below is for reporting purposes only.

Region	Highest Reading	Date
Kootenai TEOM	10.3	December 22
Pinehurst BAM	46.0	December 14
Sandpoint TEOM	16.9	December 12
St. Maries BAM	47.9	December 3

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PM2.5 FEDERAL REFERENCE METHOD (FRM) DATA

At this time the Coeur d'Alene Regional Office of Idaho DEQ uses the Federal Reference Method Sampler (filter based) measurements for NAAQS compliance determination at the St. Maries monitoring site. This method requires that 75% of available data be collected per quarter. Other filter processing requirements are applicable to this method. The Coeur d'Alene Regional Office's collection efficiency rate for November is shown in the table below. The FRM monitor at the Pinehurst site is used for quality assurance purposes. The FRM monitor at the Lancaster site was installed for a collocation study with the TEOM at that site. The study is intended to derive a formula to be applied to the Lancaster TEOM to make reporting the data more suitable for AQI calculations.

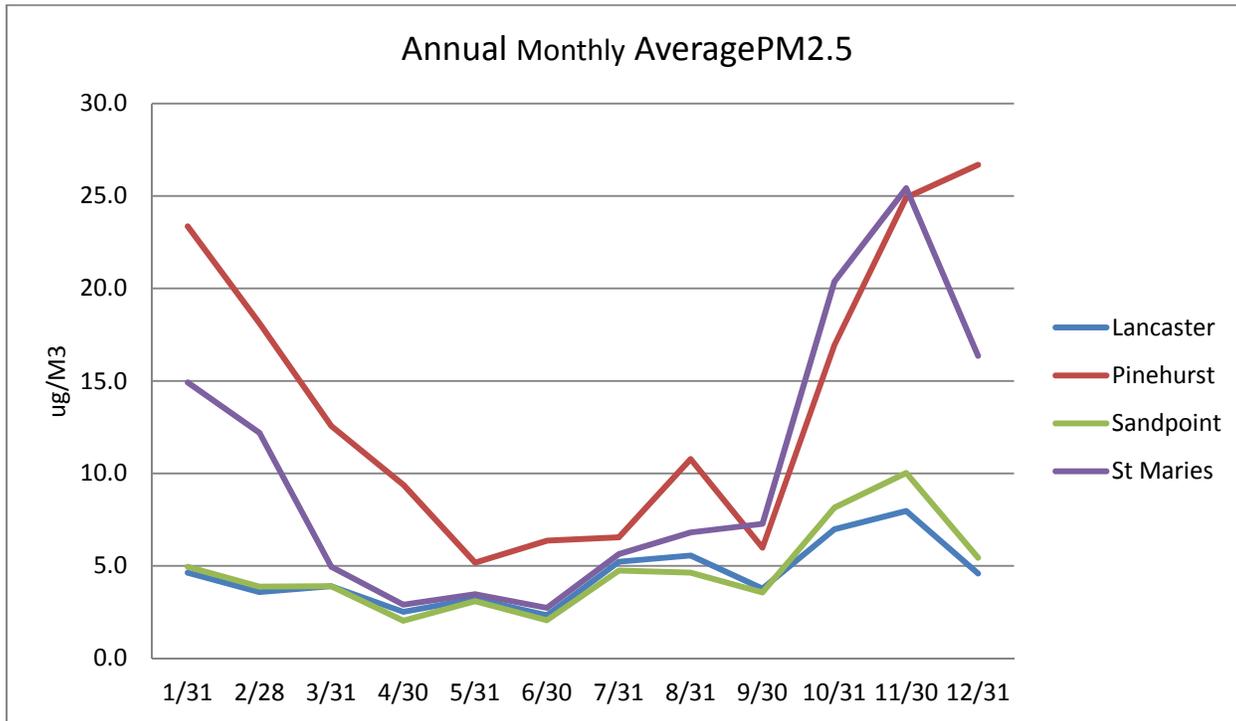
December FRM filter recovery Efficiency

Site	Sample Days	Valid Samples	Collection Percentage
Pinehurst	5	5	100%
St. Maries	5	3	60%
Lancaster	17	17	100%

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Annual Monthly Average PM 2.5

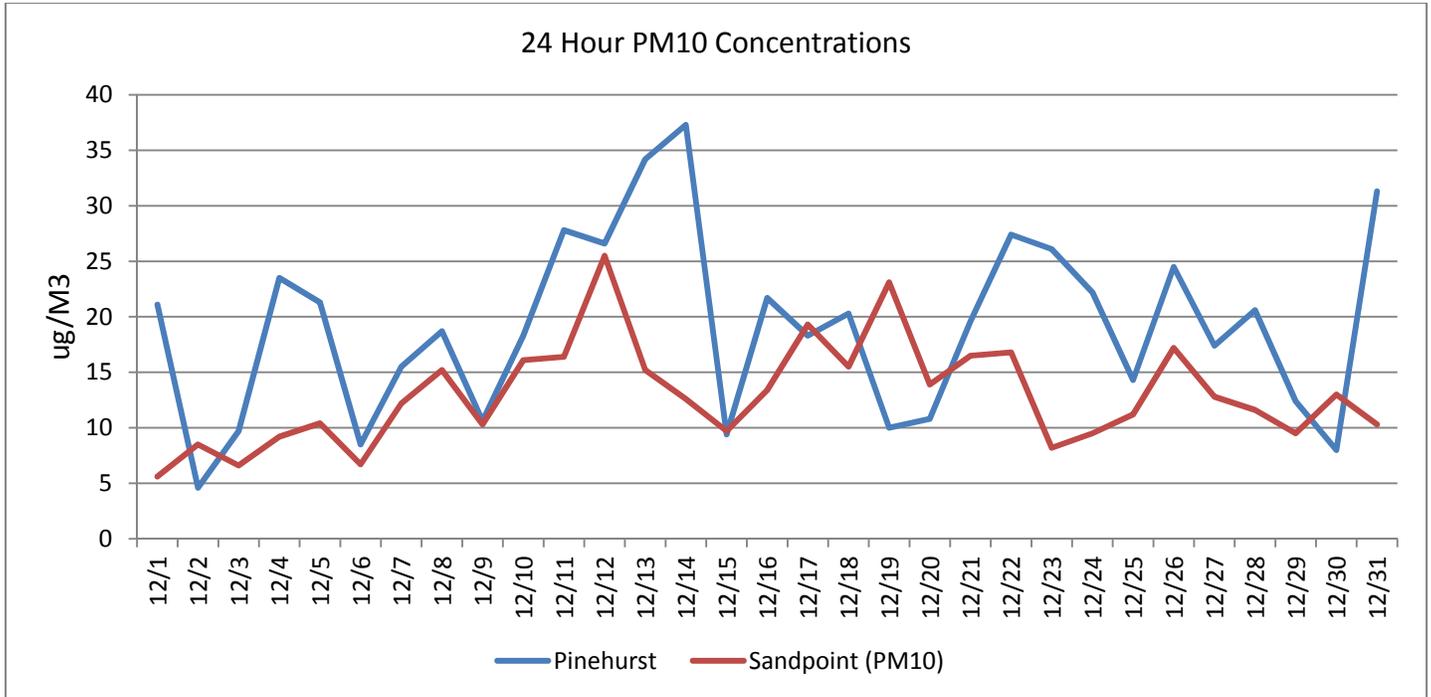


The chart above shows the average monthly PM 2.5 values throughout 2013. The highest monthly averages occur during the fall when prescribed burning and wildfire smoke impact air quality, in the winter due to wood stove use and again in the spring when wood stove use is still occurring and prescribed burns begin again.

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PM10 CONTINUOUS DATA

The graph below shows the 24 hour values for PM10. No apparent exceedances of the 150 $\mu\text{g}/\text{m}^3$ for a 24 hour average standard have occurred over this reporting period.



Air Quality Actions

The Pinehurst and St. Maries areas had several excursions of the National Ambient Air Quality Standard for PM2.5. There were no prescribed fires reported near these areas on the Montana/Idaho Airshed Group website during the month of December. There may have been other unreported fires that could have affected the air quality. The excursions were most likely caused by heavy wood stove use during the overnight hours when surface inversions and temperatures were lowest and winds were weak. Burn restrictions were placed on open burning and wood stove use 6 separate times in the Pinehurst area on December 5, 6, 12, 13, 14-16 (weekend) and again on December 28-30 (weekend).

Requests for voluntary reductions in woodstove use and open burning were called for in the St. Maries area on December 5, 27, and 28-30 (weekend).

The Stage 1 burn ban that was put into effect for the five northern counties at the end of November due to an Air Stagnation Advisory was lifted on December 1.

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NETWORK INFORMATION

The table below summarizes all active and inactive air quality samplers located within the North Idaho area during the month of December 2013.

Site	Monitor	Type	Comments	Current Status	Data Completeness
Lancaster / Rathdrum Prairie	R&P 1400A TEOM PM2.5	Continuous		Active	99%
Lancaster / Rathdrum Prairie	Meteorological Tower	Continuous		Active	99%
Lancaster / Rathdrum Prairie	Thermo Model 2025 FRM PM2.5	Filter		Active	100%
St. Maries	PM2.5 BAM	Continuous		Active	99%
St. Maries	Thermo 1405 FDMS PM2.5	Continuous		Inactive	NA
St. Maries	Thermo Model 2025 FRM PM2.5	Filter		Active	60%
Pinehurst	R&P 8500 FDMS TEOM PM2.5	Continuous		Active	99%
Pinehurst	Thermo Model 2025 FRM PM2.5	Filter		Active	100%
Pinehurst	PM2.5 BAM	Continuous		Active	90%
Pinehurst	R&P 1400AB TEOM PM10	Continuous		Active	96%
Pinehurst	Meteorological Tower	Continuous		Active	100%
Sandpoint U of I Extension Office	Meteorological Tower	Continuous		Active	100%
Sandpoint U of I Extension Office	R&P 1400A TEOM PM2.5	Continuous		Active	99%
Sandpoint U of I Extension Office	R&P 1400AB TEOM PM10	Continuous		Active	97%
Lakes Management Plan	Meteorological Tower	Continuous		Active	100%
3 Meter G C Met	Meteorological Tower	Continuous		Active	99%
Porthill International Border Site	Radiance Research Nephelometer /wind speed & direction	Continuous	CRB Seasonal	Inactive	NA
Athol	Radiance Research Nephelometer	Continuous	CRB Seasonal	Inactive	NA
Mt. Hall School	Radiance Research Nephelometer	Continuous	CRB Seasonal	Inactive	NA
Garwood Elementary	Radiance Research Nephelometer	Continuous	CRB Seasonal	Inactive	NA

During December, 14 of 15 active samplers achieved 75% or greater data completeness.

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AIR QUALITY INDEX

The air quality index is a tool used to convey information to the public regarding local levels of air pollution and the associated health concerns. These levels are depicted in the table below.

Air Quality Index (AQI): Particle Pollution

Index Values	Levels of Health Concern	Cautionary Statements
0-50	Good	None
51-100	Moderate	Unusually sensitive people should consider reducing prolonged or heavy exertion outdoors.
101-150	Unhealthy for Sensitive Groups	People with heart or lung disease, older adults, and children should reduce prolonged or heavy exertion outdoors.
151-200	Unhealthy	People with heart or lung disease, older adults, and children should avoid prolonged or heavy exertion outdoors. Everyone else should reduce prolonged or heavy exertion.
201-300	Very Unhealthy	People with heart or lung disease, older adults, and children should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy exertion.
301-500	Hazardous	People with heart or lung disease, older adults, and children should remain indoors and keep activity levels low. Everyone else should avoid all physical activity outdoors.

Below is a table showing the total weekday Air Quality Index (AQI) values for each of the reporting cities located in North Idaho for this reporting month. Differences in totals were due to sampler down time. In March 2013 the US EPA revised the PM_{2.5} NAAQS by lowering the annual standard to 12.0 ug/M³ from 15.0 ug/M³. Because of this change in the NAAQS the breakpoints between AQI categories have also been modified. It is likely the revised NAAQS and subsequent AQI revision will result in additional moderate AQI days reported in North Idaho on an annual basis.

December 2013

Coeur d'Alene	Pinehurst	Sandpoint	St. Maries
Green = 21	Green = 0	Green = 21	Green = 11
Yellow = 4	Yellow = 16	Yellow = 0	Yellow = 10
Orange = 0	Orange = 5	Orange = 0	Orange = 1
Red = 0	Red = 0	Red = 0	Red = 0

2013 YEAR TO DATE AQI TOTALS

Coeur d'Alene	Pinehurst	Sandpoint	St. Maries
Green = 240 (97%)	Green = 139 (58%)	Green = 232(95%)	Green = 151 (72%)
Yellow = 7 (3%)	Yellow = 73 (37%)	Yellow = 13 (5%)	Yellow = 53 (25%)
Orange = 0	Orange = 12 (5%)	Orange = 0	Orange = 5 (2%)
Red = 0	Red = 0	Red = 0	Red = 2 (1%)

For further information about air quality in Idaho and the northwest region visit the following sites on the Internet or contact Ralph Paul, Coeur d'Alene Region Airshed Coordinator, at 208-769-1422.

<http://www.deq.idaho.gov/>

<http://www.deq.idaho.gov/daily-air-quality-reports-forecasts>

www.airnow.gov/index.cfm?action=airnow.fcsummary&stateid=16