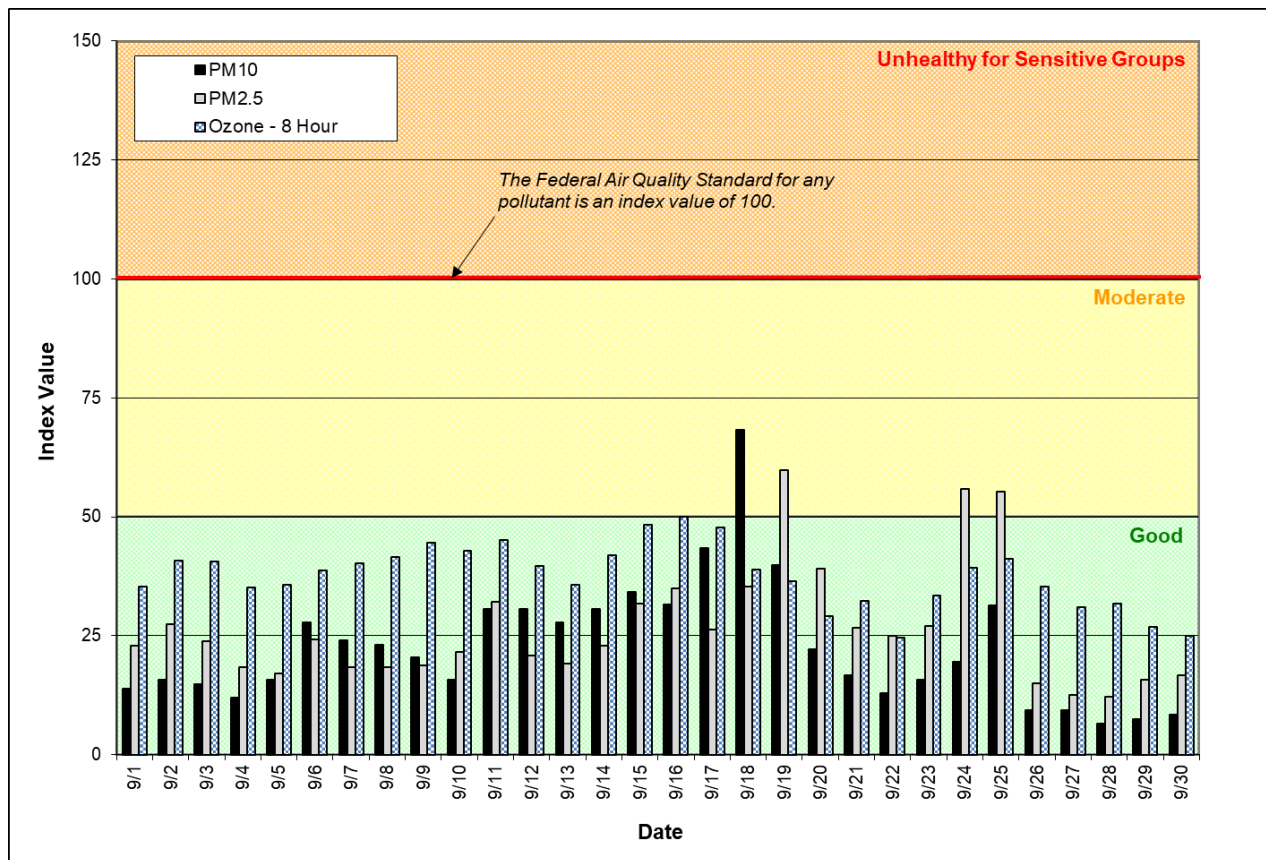


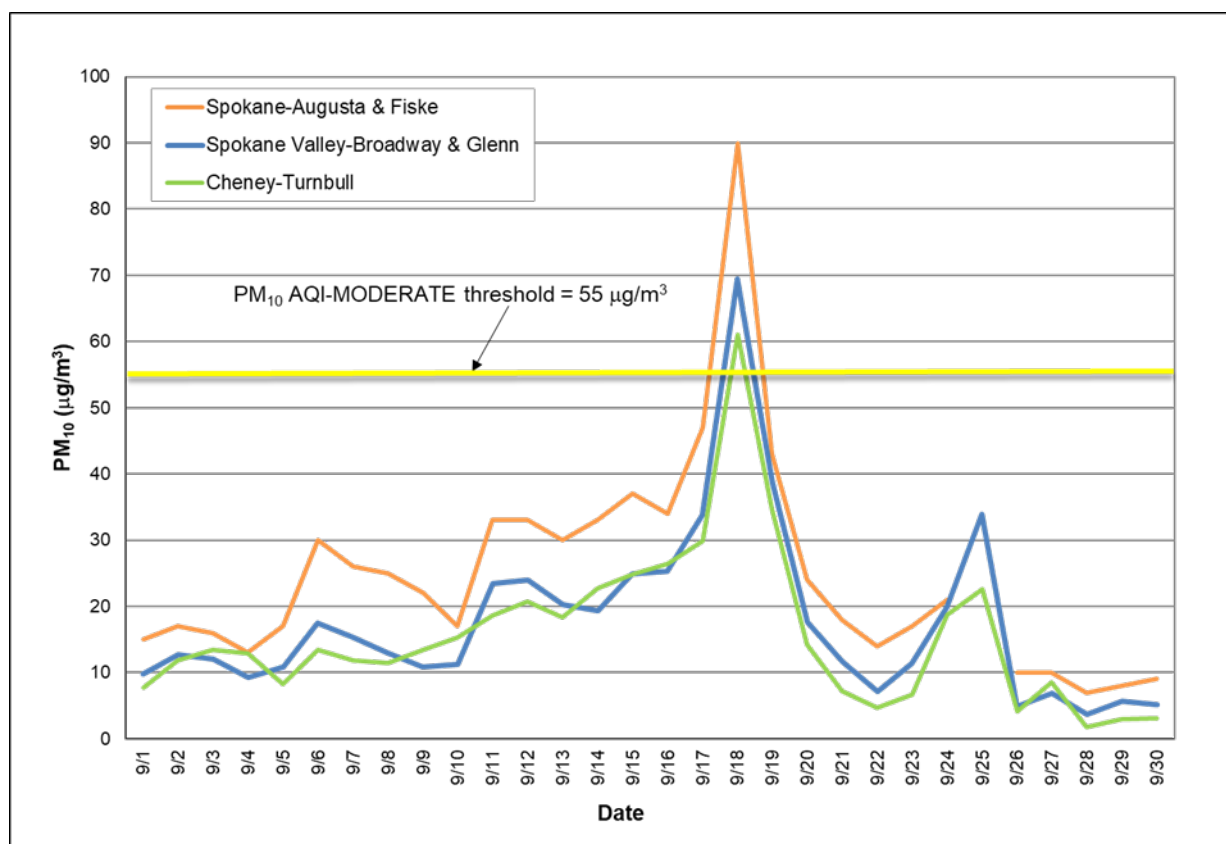
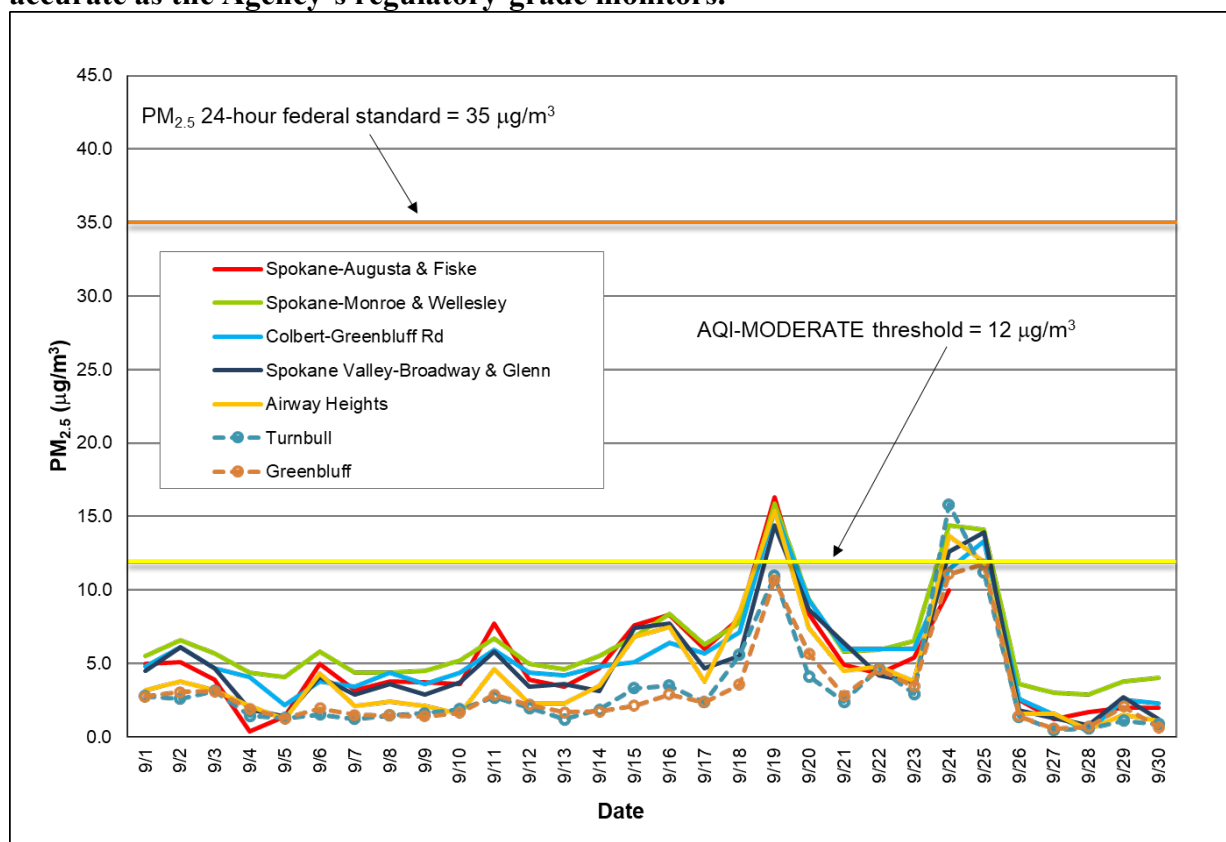
# Spokane Regional Clean Air Agency Air Quality Report - September 2023

The daily Air Quality Index (AQI) was in the MODERATE category on four days in September and was in the GOOD category on the remaining 26 days (**Figure 1 and Table 1**). Ground-level ozone was the predominant pollutant on all but six days, but it remained in the AQI-GOOD category all month. The maximum daily AQI was 68, based on a 24-hour average PM<sub>10</sub> concentration of 90 recorded at Spokane-Augusta & Fiske on the 18<sup>th</sup> (**Figure 2 and Table 2**), a result of blowing dust. The maximum AQI for PM<sub>2.5</sub> was 60 (MODERATE air quality, 24-hour PM<sub>2.5</sub> mass concentration = 16.3 µg/m<sup>3</sup>), recorded on the 19<sup>th</sup> at Spokane-Augusta & Fiske (**Figure 3**) and the maximum AQI for ozone was 50 (GOOD air quality, 8-hour maximum concentration = 0.054 ppm), which was recorded on the 8<sup>th</sup> at Spokane-Augusta & Fiske (**Figure 4**). Ozone monitoring was concluded for the year at the end of September and will resume in May 2024.

**Figure 1: Daily Air Quality Index (AQI) values for September 2023.** The data represent the maximum AQI values across all monitoring stations within Spokane County. Air pollutants monitored in Spokane County by Spokane Regional Clean Air Agency and the Washington State Department of Ecology are represented: PM<sub>10</sub>, PM<sub>2.5</sub>, and ozone.



See Appendix 1 of this report for information about federal air quality standards, Appendix 2 for a description of the AQI, or Appendix 3 for a summary of daily ozone, PM<sub>2.5</sub>, and PM<sub>10</sub> concentrations and AQIs across the Spokane-area ambient air monitoring network. Current and historical ambient air quality data can also be obtained from the Washington State Department of Ecology's air monitoring data website, <https://enviwa.ecology.wa.gov/home/map>.

**Figure 2: Daily 24-hour average PM<sub>10</sub> for September 2023; Spokane County.****Figure 3: Daily 24-hour average PM<sub>2.5</sub> for September 2023; monitoring stations across Spokane County. Turnbull and Greenbluff data are collected using low-cost sensors, which are not as accurate as the Agency's regulatory-grade monitors.**

**Figure 4: Eight-hour maximum ozone concentrations for the Spokane region in September measured at the Spokane-Greenbluff and Cheney-Turnbull air monitoring stations.**

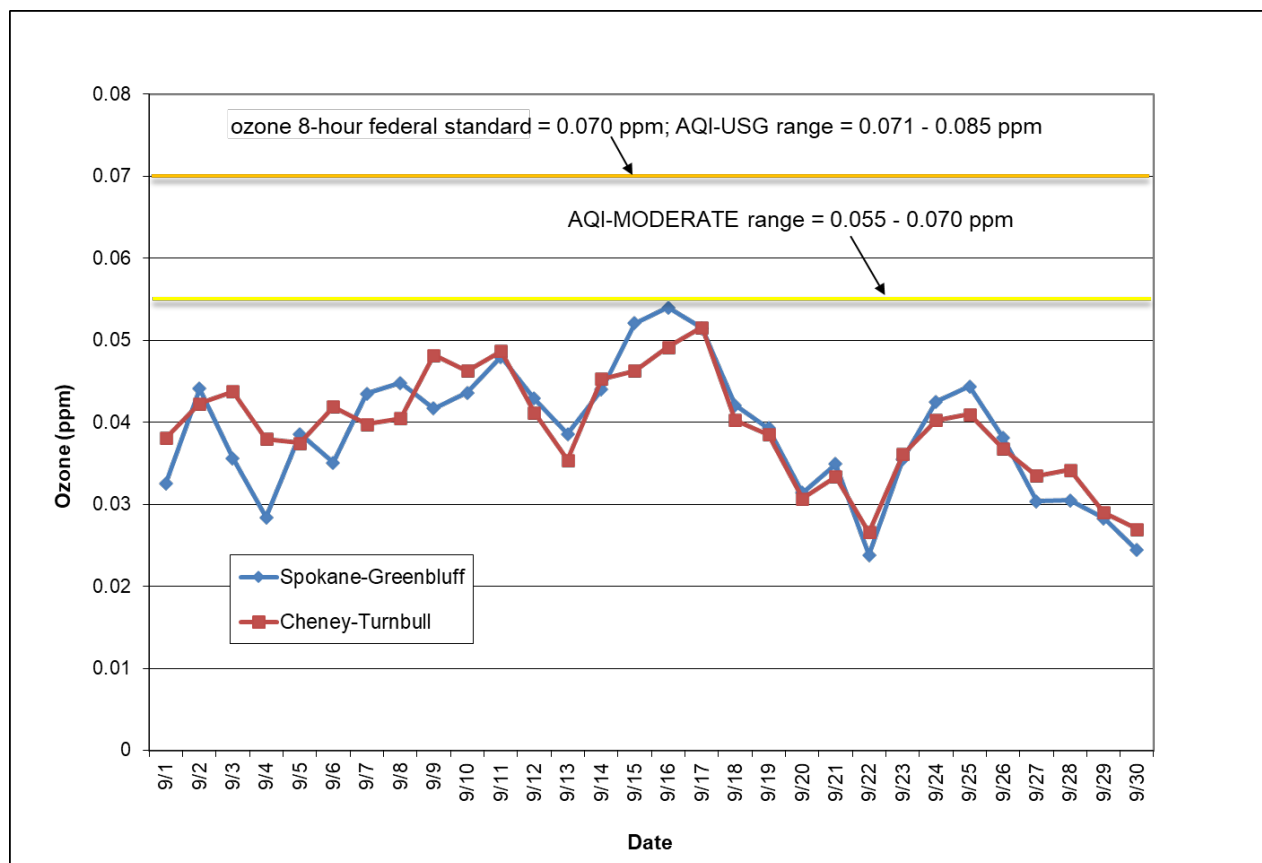


Table 1 summarizes the daily AQIs by category for the month and year-to-date and Tables 2 and 3 contain the maximum AQI values for each pollutant for the month and for the year, respectively.

**Table 1: AQI summary, September 2023**

Category	Number of days in September	Number of days this year to date
Good (0-50)	26	209
Moderate (51-100)	4	59
Unhealthy for Sensitive Groups (101-150)	0	1
Unhealthy (151-200)	0	2
Very Unhealthy (201-300)	0	1
Hazardous (>300)	0	1

**Table 2:** Maximum AQI values and pollutant concentrations for this reporting period.

Pollutant	AQI		Location	Date
Ozone	50 (conc. = 0.054 ppm)	Good	Spokane-Greenbluff	9/16
PM <sub>10</sub>	68 (mass conc. = 90 µg/m <sup>3</sup> )	Moderate	Spokane – Augusta & Fiske	9/18
PM <sub>2.5</sub>	60 (mass conc. = 16.3 µg/m <sup>3</sup> )	Moderate	Spokane – Augusta & Fiske	9/19

**Table 3:** Maximum AQI values and pollutant concentrations this year.

Pollutant	AQI		Location	Date
Ozone	88 (conc. = 0.066 ppm)	Moderate	Turnbull National Wildlife Refuge	8/19
PM <sub>10</sub>	164 (mass conc. = 281 µg/m <sup>3</sup> )	Unhealthy	Spokane Valley – Broadway & Glenn	8/19
PM <sub>2.5</sub>	368 (mass conc. = 317.7 µg/m <sup>3</sup> )	Hazardous	Spokane – Greenbluff	8/19

## Appendix 1 – National Ambient Air Quality Standards

The Clean Air Act requires EPA to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants, carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), ground-level ozone (O<sub>3</sub>) and sulfur dioxide (SO<sub>2</sub>; Table A-1). These are known as “criteria” pollutants because the US EPA established regulatory limits to concentrations in ambient air using human health or environmentally based criteria. Carbon monoxide, particulate matter and ozone are monitored in Spokane County by the Spokane Regional Clean Air Agency (SRCAA) and the Washington State Department of Ecology (Ecology).

**Table A-1: National Ambient Air Quality Standards**

Pollutant [links to historical tables of NAAQS reviews]		Primary/ Secondary	Averaging Time	Level	Form
<a href="#">Carbon Monoxide (CO)</a>		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
<a href="#">Lead (Pb)</a>		primary and secondary	Rolling 3 month period	0.15 µg/m <sup>3</sup> <sup>(1)</sup>	Not to be exceeded
<a href="#">Nitrogen Dioxide (NO<sub>2</sub>)</a>		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb <sup>(2)</sup>	Annual Mean
<a href="#">Ozone (O<sub>3</sub>)</a>		primary and secondary	8 hours	0.070 ppm <sup>(3)</sup>	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
<a href="#">Particle Pollution (PM)</a>	PM <sub>2.5</sub>	primary	1 year	12.0 µg/m <sup>3</sup>	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m <sup>3</sup>	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m <sup>3</sup>	98th percentile, averaged over 3 years
	PM <sub>10</sub>	primary and secondary	24 hours	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years
<a href="#">Sulfur Dioxide (SO<sub>2</sub>)</a>		primary	1 hour	75 ppb <sup>(4)</sup>	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m<sup>3</sup> as a calendar quarter average) also remain in effect. (2) The level of the annual NO<sub>2</sub> standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level. (3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O<sub>3</sub> standards additionally remain in effect in some areas. Revocation of the previous (2008) O<sub>3</sub> standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards. (4) The previous SO<sub>2</sub> standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (a) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (b) any area for which implementation plans providing for attainment of the current (2010) standard have not been submitted and approved and which is designated nonattainment under the previous SO<sub>2</sub> standards or is not meeting the requirements of a SIP call under the previous SO<sub>2</sub> standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the require NAAQS.

## Appendix 2 – Air Quality Index

The Air Quality Index (AQI) is EPA’s color-coded tool for communicating daily air quality to the public and can be calculated for any of the criteria pollutants except lead, provided monitoring data are available. An index value above 100 indicates that the concentration of a criteria pollutant exceeded the limit established in the NAAQS. Categories of the AQI are “Good” (green, 0-50), “Moderate” (yellow, 51-100), “Unhealthy for Sensitive Groups” (USG; orange, 101-150), “Unhealthy” (red, 151-200), “Very Unhealthy” (purple, 201-300) and “Hazardous” (maroon, 301-500; Table A-2).

**Table A-2: Air pollutant breakpoints for the Air Quality Index.**

Air Quality Index Levels of Health Concern	Color Code	Index Numerical Value	Breakpoints				Health Effects
			O <sub>3</sub> (ppm) 8-hour	PM <sub>2.5</sub> (µg/m <sup>3</sup> ) 24-hour	PM <sub>10</sub> (µg/m <sup>3</sup> ) 24-hour	CO (ppm) 8-hour	
<b>Good</b>	Green	0-50	0.000-0.054	0.0-12.0	0-54	0.0-4.4	Air quality is considered satisfactory and air pollution poses little or no risk.
<b>Moderate</b>	Yellow	51-100	0.055-0.070	12.1-35.4	55-154	4.5-9.4	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
<b>Unhealthy for Sensitive Groups</b>	Orange	101-150	0.071-0.085	35.5-55.4	155-254	9.5-12.4	People especially sensitive to air pollution may experience health effects. The general public is not likely to be affected. An AQI in this category or above indicates that air pollution exceeds levels acceptable under federal air quality standards.
<b>Unhealthy</b>	Red	151-200	0.086-0.105	55.5-150.4	255-354	12.5-15.4	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
<b>Very Unhealthy</b>	Purple	201-300	0.106-0.200	150.5-250.4	355-424	15.5-30.4	Health alert: everyone may experience more serious health effects.
<b>Hazardous</b>	Maroon	>300	0.201 to the Significant Harm Level* (0.600 ppm, 2 hour average)	250.5+	425+	30.5+	Health warnings of emergency conditions. The entire population is more likely to be affected.

\*The significant harm level (SHL) is set at a level that represents imminent and substantial endangerment to public health.

## Appendix 3

**Table A-3: September summary air quality data for air monitoring stations in Spokane County.** Particulate matter mass concentration is reported as 24-hour averages in micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ). See Appendix 2 for an explanation of the Air Quality Index. Loss of data at Spokane-Augusta & Fiske on the 25<sup>th</sup> was caused by a data logger malfunction.

Pollutant Concentration												
Date	Ozone (ppm)		PM <sub>2.5</sub> (µg/m <sup>3</sup> )							PM <sub>10</sub> (µg/m <sup>3</sup> )		
	Ozone - Turnbull NWR	Ozone - Greenbluff	24-Hour Avg							24-Hour Avg		
			PM <sub>2.5</sub> - Airway Heights, 12th & Lawson	PM <sub>2.5</sub> - Colbert, E Greenbluff Rd	PM <sub>2.5</sub> - Spokane, Augusta & Fiske	PM <sub>2.5</sub> - Spokane Valley, Broadway & Glenn	PM <sub>2.5</sub> - Spokane, Monroe & Wellesley	PM <sub>2.5</sub> - Turnbull NWR ("low-cost" sensor)	PM <sub>2.5</sub> - Greenbluff ("low-cost" sensor)	PM <sub>10</sub> - Turnbull NWR BAM	PM <sub>10</sub> - Spokane, Augusta & Fiske	PM <sub>10</sub> - Spokane Valley, Broadway & Glenn
9/1	0.038	0.033	3.2	4.8	5.0	4.5	5.5	2.8	2.8	7	15	9
9/2	0.042	0.044	3.8	6.1	5.1	6.1	6.6	2.6	3.1	11	17	12
9/3	0.044	0.036	3.2	4.7	3.9	4.7	5.7	3.1	3.1	13	16	12
9/4	0.038	0.028	2.1	4.1	0.4	1.9	4.4	1.4	1.9	12	13	9
9/5	0.038	0.039	1.2	2.2	1.4	1.4	4.1	1.3	1.3	8	17	10
9/6	0.042	0.035	4.3	3.8	5.0	4.1	5.8	1.5	2.0	13	30	17
9/7	0.040	0.044	2.1	3.4	3.2	2.9	4.4	1.2	1.5	11	26	15
9/8	0.041	0.045	2.4	4.4	3.8	3.6	4.4	1.5	1.5	11	25	13
9/9	0.048	0.042	2.1	3.6	3.7	2.9	4.5	1.6	1.4	13	22	10
9/10	0.046	0.044	1.6	4.4	3.6	3.7	5.2	1.9	1.6	15	17	11
9/11	0.049	0.048	4.6	5.9	7.7	5.8	6.7	2.7	2.9	18	33	23
9/12	0.041	0.043	2.3	4.4	3.9	3.4	5.0	2.0	2.2	20	33	24
9/13	0.035	0.039	2.3	4.2	3.4	3.6	4.6	1.2	1.7	18	30	20
9/14	0.045	0.044	3.5	4.8	4.7	3.1	5.5	1.8	1.7	22	33	19
9/15	0.046	0.052	6.8	5.1	7.6	7.4	6.8	3.3	2.1	24	37	24
9/16	0.049	0.054	7.5	6.4	8.3	7.7	8.4	3.5	2.9	26	34	25
9/17	0.052	0.052	3.8	5.7	6.0	4.7	6.3	2.4	2.4	29	47	33
9/18	0.04	0.042	8.5	7.1	8.1	5.5	7.8	5.6	3.6	61	90	69
9/19	0.039	0.039	15.4	15.4	16.3	14.4	15.9	10.9	10.7	34	43	38
9/20	0.031	0.031	7.4	9.3	8.4	8.7	9.4	4.1	5.7	14	24	17
9/21	0.033	0.035	4.5	6.0	4.9	6.4	5.8	2.4	2.8	7	18	11
9/22	0.027	0.024	4.8	6.0	4.3	4.2	5.9	4.7	4.6	4	14	7
9/23	0.036	0.036	3.8	6.0	5.4	3.7	6.5	2.9	3.4	6	17	11
9/24	0.04	0.043	13.7	11.4	10.0	12.6	14.4	15.8	11.1	18	21	19
9/25	0.041	0.044	11.9	13.3		13.9	14.1	11.2	11.8	22		33
9/26	0.037	0.038	1.6	2.6	2.5	1.8	3.6	1.4	1.4	4	10	4
9/27	0.034	0.03	1.6	1.5	1.2	1.3	3.0	0.5	0.6	8	10	6
9/28	0.034	0.031	0.5	0.4	1.7	0.8	2.9	0.6	0.7	1	7	3
9/29	0.029	0.028	1.5	2.5	2.0	2.7	3.8	1.1	2.1	3	8	5
9/30	0.027	0.024	1.1	2.3	2.0	1.2	4.0	0.9	0.7	3	9	5
AVG	0.039	0.039	4.4	5.4	4.9	5.0	6.4	3.3	3.2	15	25	17
MAX	0.052	0.054	15.4	15.4	16.3	14.4	15.9	15.8	11.8	61	90	69

Air Quality Index (AQI)													
Date	Ozone		PM <sub>2.5</sub>							PM <sub>10</sub>			MAXIMUM
	Ozone - Turnbull NWR	Ozone - Greenbluff	PM <sub>2.5</sub> - Airway Heights, 12th & Lawson	PM <sub>2.5</sub> - Colbert, E Greenbluff Rd	PM <sub>2.5</sub> - Spokane - Augusta & Fiske	PM <sub>2.5</sub> - Spokane Valley, Broadway & Glenn	PM <sub>2.5</sub> - Spokane, Monroe & Wellesley	PM <sub>2.5</sub> - Turnbull NWR ("low-cost" sensor)	PM <sub>2.5</sub> - Greenbluff ("low-cost" sensor)	PM <sub>10</sub> - Turnbull NWR	PM <sub>10</sub> - Spokane, Augusta & Fiske	PM <sub>10</sub> - Spokane Valley, Broadway & Glenn	
9/1	35	30	13	20	21	19	23	12	12	7	14	9	35
9/2	39	41	16	25	21	25	28	11	13	11	16	12	41
9/3	41	33	13	20	16	20	24	13	13	13	15	11	41
9/4	35	26	9	17	2	8	18	6	8	12	12	9	35
9/5	35	36	5	9	6	6	17	5	5	8	16	10	36
9/6	39	33	18	16	21	17	24	6	8	13	28	16	39
9/7	37	40	9	14	13	12	18	5	6	11	24	14	40
9/8	38	41	10	18	16	15	18	6	6	11	23	12	41
9/9	45	39	9	15	15	12	19	7	6	13	20	10	45
9/10	43	40	7	18	15	15	22	8	7	14	16	10	43
9/11	45	44	19	25	32	24	28	11	12	17	31	22	45
9/12	38	40	10	18	16	14	21	8	9	19	31	22	40
9/13	33	36	10	18	14	15	19	5	7	17	28	19	36
9/14	42	41	15	20	20	13	23	8	7	21	31	18	42
9/15	43	48	28	21	32	31	28	14	9	23	34	23	48
9/16	46	50	31	27	35	32	35	15	12	24	31	23	50
9/17	48	48	16	24	25	20	26	10	10	28	44	31	48
9/18	37	39	35	30	34	23	33	23	15	54	68	58	68
9/19	36	36	58	58	60	56	59	46	45	32	40	36	60
9/20	28	29	31	39	35	36	39	17	24	13	22	16	39
9/21	31	32	19	25	20	27	24	10	12	7	17	11	32
9/22	25	22	20	25	18	18	25	19	19	4	13	7	25
9/23	33	33	16	25	23	15	27	12	14	6	16	11	33
9/24	37	39	54	48	42	52	56	59	46	17	19	18	59
9/25	38	41	50	54		55	55	47	49	21		31	55
9/26	34	35	7	11	10	8	15	6	6	4	9	5	35
9/27	31	28	7	6	5	5	13	2	2	8	9	6	31
9/28	32	28	2	2	7	3	12	2	3	2	6	3	32
9/29	27	26	6	10	8	11	16	5	9	3	7	5	27
9/30	25	23	5	10	8	5	17	4	3	3	8	5	25
AVG	36	36	18	22	20	20	26	13	13	14	22	16	41
MAX	48	50	58	58	60	56	59	59	49	54	68	58	68