Table 1a. Data Collection Statistics
Sites Operated by the National Park Service
National Park Service Gaseous Pollutant Monitoring Program, 2012

		Parameter Code												
National Park	Site Name	O3 % valid[1]	SO2 % valid[1]	CO % valid[1]	NOx % valid[1]	PM2.5 % valid[1]	PM10 % valid[1]	VWD[2] % valid[1]	SWS[3] % valid[1]	TMP % valid[1]	RH % valid[1]	RNF % valid[1]	SOL %valid[1]	FLOW % valid[1]
Big Bend	K-Bar Ranch Road	97.2	—	—	—	—	—	97.3	97.3	97.2	97.4	96.8	94.4	97.6
Canyonlands	Island in the Sky	99.7	—	—	—	—	—	99.3	99.3	99.3	99.9	85.8	99.4	100.0
Chiricahua	Entrance Station	96.7	—	—	—	—	—	99.8	99.8	99.8	99.8	91.3	99.8	99.8
Craters of the Moon	Visitor Center	97.4	—	—	—	—	—	69.3	99.8	99.7	99.7	—	99.8	—
Denali	Headquarters	99.8	—	—	—	—	—	99.5	99.5	99.8	99.5	97.9	94.5	99.9
Death Valley	Park Village	99.3	—	—	—	—	—	99.6	99.6	99.8	99.8	98.6	—	—
Everglades	Beard Center	—	—	—	—	—	—	95.0	95.2	95.2	87.1	84.6	87.1	95.3
Glacier	West Glacier Horse Stables	96.2	—	—	—	—	—	95.4	95.4	99.7	99.7	61.6	99.7	99.8
Great Basin	Maintenance Yard	95.0	—	—	—	—	—	74.1	74.1	95.8	95.8	95.3	96.0	92.7
Grand Canyon	The Abyss	99.4	—	—	—	—	—	99.6	99.6	99.9	99.9	99.3	99.6	99.9
Great Smoky Mountains	Cades Cove	—	—	—	—	—	—	98.5	98.5	99.5	99.5	98.9	99.5	—
Great Smoky Mountains	Clingmans Dome	96.7	—	—	—	—	—	99.8	99.8	94.0	94.0	99.7	99.8	—
Great Smoky Mountains	Cove Mountain	99.5	98.7	—	—	—	—	99.0	99.0	98.8	98.8	99.2	—	—
Great Smoky Mountains	Look Rock	99.0	—	—	—	—	—	99.7	99.7	99.7	99.8	99.4	99.8	99.9
Grand Teton	Science School	99.6	—	—	—	—	—	99.5	99.5	99.7	99.5	99.2	99.7	—
Hawaii Volcanoes	Observatory	—	99.8	—	—	100.0	—	100.0	100.0	100.0	100.0	99.8	—	—
Hawaii Volcanoes	Visitor Center	—	99.8	—	—	—	—	99.8	99.8	99.7	99.7	99.7	99.8	—
Joshua Tree	Black Rock	99.2	—	—	—	—	—	29.3	99.5	93.4	99.4	98.9	99.5	98.6
Joshua Tree	Cottonwood Canyon	83.7	—	—	—	—	—	96.6	99.2	99.3	99.3	99.3	99.4	—
Lassen Volcanic	Manzanita Lake Fire Stn.	97.8	—	—	—	—	—	97.6	98.0	98.0	98.0	97.7	98.0	98.0
Mammoth Cave	Houchin Meadow	99.8	99.8	97.8	—	—	—	90.4	90.4	99.9	100.0	99.5	100.0	99.9
Mesa Verde	Resource Mngment Area	97.9	—	—	—	—	—	99.5	99.5	99.5	99.0	98.3	99.6	99.5
Mount Rainier	Tahoma Woods	99.5	—	—	—	—	—	54.5	55.0	99.6	95.8	99.5	84.6	99.8
Petrified Forest	South Entrance	98.3	—	—	—	—	—	94.4	99.9	99.9	99.7	99.2	99.9	100.0
Pinnacles	SW of East Entrance Stn.	99.5	—	—	—	—	—	99.5	99.5	99.5	99.6	93.1	99.6	99.7
Rocky Mountain	Long's Peak	99.6	—	—	—	—	—	57.8	99.1	61.7	99.9	99.6	99.8	99.8
Sequoia and Kings Canyon	Ash Mountain	99.2	—	—	—	90.7	—	98.8	98.8	99.0	84.9	98.8	99.2	99.8
Sequoia and Kings Canyon	Lower Kaweah	98.2	—	—	—	—	—	95.7	96.9	96.2	89.6	97.4	98.0	—
Shenandoah	Big Meadows	97.2	—	—	—	—	—	96.1	96.4	97.6	96.4	97.4	97.6	97.5
Theodore Roosevelt	Painted Cany. VC	—	—	—	—	—	—	33.7	33.7	98.2	99.0	99.7	98.2	98.4
Voyageurs	Sullivan Bay	97.5	—	—	—	—	—	92.0	92.0	97.7	97.7	99.9	88.4	97.7
Wind Cave	Visitor Center	—	—	—	—	—	—	98.9	98.9	99.3	99.2	81.3	99.4	75.5
Yellowstone	Old Faithful	—	—	96.4	—	99.9	—	99.8	99.8	100.0	99.3	—	—	—
Yellowstone	Old Faithful Snow Lodge	—	—	96.6	—	99.2	—	96.9	96.9	100.0	100.0	—	—	—
Yellowstone	Water Tank	96.0	—	—	—	—	—	97.5	97.5	97.5	97.5	97.0	97.6	98.1
Yosemite	Turtleback Dome	99.3	—	—	—	—	—	99.2	99.2	99.9	99.8	99.6	100.0	99.7

Table 1a (continued). Data Collection Statistics
Sites Operated by the National Park Service
National Park Service Gaseous Pollutant Monitoring Program, 2012

National Park Unit	Site Name	Parameter Code												
		O3	SO2	CO	NOx	PM2.5	PM10	VWD[2]	SWS[3]	TMP	RH	RNF	SOL	FLOW
		% valid[1]	% valid[1]	% valid[1]	% valid[1]	% valid[1]	% valid[1]	% valid[1]	% valid[1]	% valid[1]	% valid[1]	%valid[1]	% valid[1]	% valid[1]
Zion	Dalton's Wash	99.8	——	——	——	89.1	——	99.6	99.5	99.9	99.7	99.6	98.2	——
Average Network Data Collection		**98.1**	**96.9**	**97.2**	**96.8**	**95.3**	**90.9**	**90.2**	**94.5**	**97.6**	**97.9**	**95.9**	**97.6**	**97.8**

Operating agency key:

plain text = site operated by the National Park Service
italics = site operated by a state agency
underline = site operated by the National Park Service, but consisting of non-EPA certified portable instrumentation

Key:

O3 = Ozone Analyzer
SO2 = Sulfur Dioxide Analyzer
CO = Carbon Monoxide
NOx = Oxides of Nitrogen
PM2.5 = Particulate Matter 2.5
PM10 = Particulate Matter 10
VWD = Vector Wind Direction
SWS = Scalar Wind Speed
TMP = Temperature
RH = Relative Humidity
RNF = Precipitation
SOL = Solar Radiation
FLOW = Filter Pack Flow Rate

1. The percent is calculated against the number possible. Percent valid can be less than 100% due to routine maintenance, power failures, audits or other circumstances where the instrument was not available to collect data. Percent valid can also be less than 100% due to influencing factors such as instrument error, operator error, timing problems, flow issues, and other factors that affect instrument operation. When calculating percent valid for O_3 and SO_2, calibration events were removed from the number possible.

2. Cape Cod reports wind direction as scalar wind direction rather than vector wind direction.

3. Saguaro reports wind speed as vector wind speed rather than scalar wind speed.

Note: Portable ozone monitoring systems typically operate during the summer ozone season only.

Table 1b. Data Collection Statistics
Sites Operated by the NPS for the BLM
National Park Service Gaseous Pollutant Monitoring Program, 2012

National Park Unit	Site Name	Parameter Code: O3 % valid[1]	SO2 % valid[1]	CO % valid[1]	NOx % valid[1]	PM2.5 % valid[1]	PM10 % valid[1]	VWD[2] % valid[1]	SWS[3] % valid[1]	TMP % valid[1]	RH % valid[1]	RNF % valid[1]	SOL % valid[1]	FLOW % valid[1]
Meeker	Plant Science	98.1	——	——	99.6	94.4	——	99.7	99.7	99.9	99.9	99.7	100.0	95.3
Rangely	Golf Course	96.0	——	——	97.9	90.2	——	99.6	99.6	99.8	99.8	99.7	99.9	
Average Network Data Collection		**97.1**			**98.7**	**92.3**		**99.7**	**99.7**	**99.9**	**99.9**	**99.7**	**99.9**	**95.3**

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Key:

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SO2 = Sulfur Dioxide Analyzer
CO = Carbon Monoxide
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PM2.5 = Particulate Matter 2.5
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VWD = Vector Wind Direction
SWS = Scalar Wind Speed
TMP = Temperature
RH = Relative Humidity
RNF = Precipitation
SOL = Solar Radiation
FLOW = Filter Pack Flow Rate

1. The percent is calculated against the number possible. Percent valid can be less than 100% due to routine maintenance, power failures, audits or other circumstances where the instrument was not available to collect data. Percent valid can also be less than 100% due to influencing factors such as instrument error, operator error, timing problems, flow issues, and other factors that affect instrument operation. When calculating percent valid for O_3 and SO_2, calibration events were removed from the number possible.

2. Cape Cod reports wind direction as scalar wind direction rather than vector wind direction.

3. Saguaro reports wind speed as vector wind speed rather than scalar wind speed.

Note: Portable ozone monitoring systems typically operate during the summer ozone season only.

Table 1c. Data Collection Statistics
Sites Operated by the NPS for the USFS
National Park Service Gaseous Pollutant Monitoring Program, 2012

National Park Unit	Site Name	Parameter Code: O3 % valid[1]	SO2 % valid[1]	CO % valid [1]	NOx % valid[1]	PM2.5 % valid [1]	PM10 % valid [1]	VWD[2] % valid [1]	SWS[3] % valid [1]	TMP % valid[1]	RH % valid[1]	RNF % valid[1]	SOL % valid[1]	FLOW % valid[1]
Escalante	Visitor Center	99.8	——	——	——	——	——	99.2	99.2	99.7	99.7	99.7	73.0	——
Walden - Colorado	Chandler Ranch	89.4	98.1	12.6	56.7	——	15.1	59.3	99.9	100.0	100.0	——	99.9	——
Average Network Data Collection		**94.6**	**98.1**	**12.6**	**56.7**		**15.1**	**79.3**	**99.6**	**99.8**	**99.8**	**99.7**	**86.4**	

Operating agency key:

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Key:

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CO = Carbon Monoxide
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PM2.5 = Particulate Matter 2.5
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VWD = Vector Wind Direction
SWS = Scalar Wind Speed
TMP = Temperature
RH = Relative Humidity
RNF = Precipitation
SOL = Solar Radiation
FLOW = Filter Pack Flow Rate

1. The percent is calculated against the number possible. Percent valid can be less than 100% due to routine maintenance, power failures, audits or other circumstances where the instrument was not available to collect data. Percent valid can also be less than 100% due to influencing factors such as instrument error, operator error, timing problems, flow issues, and other factors that affect instrument operation. When calculating percent valid for O_3 and SO_2, calibration events were removed from the number possible.

2. Cape Cod reports wind direction as scalar wind direction rather than vector wind direction.

3. Saguaro reports wind speed as vector wind speed rather than scalar wind speed.

Note: Portable ozone monitoring systems typically operate during the summer ozone season only.

Table 1d. Data Collection Statistics
Portable Ozone Monitoring Systems (POMS)
National Park Service Gaseous Pollutant Monitoring Program, 2012

National Park Unit	Site Name	Parameter Code: O3 % valid[1]	SO2 % valid[1]	CO % valid[1]	NOx % valid[1]	PM2.5 % valid[1]	PM10 % valid[1]	VWD % valid[1]	SWS % valid[1]	TMP % valid[1]	RH % valid[1]	RNF % valid[1]	SOL % valid[1]	FLOW % valid[1]
Carl Sandburg	Pasture	99.9	——	——	——	——	——	——	100.0	100.0	100.0	80.9	100.0	——
Carlsbad Caverns	Maintenance Area	89.2	——	——	——	——	——	——	99.6	99.9	99.9	99.9	99.9	——
Colorado	Maintenance Yard	99.8	——	——	——	——	——	——	100.0	100.0	100.0	100.0	100.0	——
Cumberland Gap	Hensley Settlement	96.5	——	——	——	——	——	——	99.8	99.1	99.3	99.9	99.9	——
Devil's Tower	Joyner Ridge Trail	74.7	——	——	——	——	——	——	99.9	97.2	97.2	100.0	100.0	——
Dinosaur	West Entrance Housing	97.1	——	——	——	——	——	——	98.5	99.7	99.7	99.8	99.7	——
Guilford Courthouse	Library	87.1	——	——	——	——	——	——	99.9	99.9	99.9	——	——	——
Joshua Tree	Pinto Wells	100.0	——	——	——	——	——	——	100.0	100.0	100.0	100.0	100.0	——
Kings Mountain	Brown's Mountain	96.6	——	——	——	——	——	——	99.3	99.9	99.9	99.9	99.9	——
Mojave	Kelso Mountains	99.0	——	——	——	——	——	——	100.0	99.8	99.8	100.0	99.8	——
Scotts Bluff	Visitor Center	100.0	——	——	——	——	——	——	100.0	100.0	100.0	100.0	100.0	——
Yosemite - Mobile	Glacier Point	86.1	——	——	——	——	——	——	——	99.7	99.7	——	——	——
Yosemite	School Yard	99.4	——	——	——	——	——	——	100.0	100.0	100.0	99.9	100.0	——
Average Network Data Collection		**94.9**							**99.7**	**99.7**	**99.7**	**98.1**	**99.9**	

Operating agency key:

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italics = site operated by a state agency
underline = site operated by the National Park Service, but consisting of non-EPA certified portable instrumentation

Key:

O3 = Ozone Analyzer
SO2 = Sulfur Dioxide Analyzer
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TMP = Temperature
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SOL = Solar Radiation
FLOW = Filter Pack Flow Rate

1. The percent is calculated against the number possible. Percent valid can be less than 100% due to routine maintenance, power failures, audits or other circumstances where the instrument was not available to collect data. Percent valid can also be less than 100% due to influencing factors such as instrument error, operator error, timing problems, flow issues, and other factors that affect instrument operation. When calculating percent valid for O_3 and SO_2, calibration events were removed from the number possible.

2. Cape Cod reports wind direction as scalar wind direction rather than vector wind direction.

3. Saguaro reports wind speed as vector wind speed rather than scalar wind speed.

Note: Portable ozone monitoring systems typically operate during the summer ozone season only.

Table 2. Ozone Analyzer Precision and Verification Summary Sites Operated by the National Park Service

National Park Service Gaseous Pollutant Monitoring Program, 2012

			Precision				As-found Verification Multi-Point		
National Park Unit	Site Name	Calendar Quarter	Required No. of Precision Checks Met?[1]	Avg. Absolute Percent Difference[3,4]	Lower 95% Probability Limit[6]	Upper 95% Probability Limit[6]	Accuracy Check Performed During the Quarter?[2]	Avg. Absolute Percent Difference [3,4]	Max. Absolute Percent Difference[5]
Big Bend	K-Bar Ranch Road	1	Y	1.6	-6.2	3.1	Y	1.5	1.9
		2	Y	4.9	-7.9	-2.0	N	—	—
		3	N	0.6	-5.6	4.5	Y	1.6	4.3
		4	Y	1.7	0.4	3.1	N	—	—
Canyonlands	Island in the Sky	1	Y	3.7	-5.7	-1.8	Y	2.4	3.5
		2	Y	3.6	-6.3	-0.9	N	—	—
		3	Y	6.4	-9.3	-3.5	N	—	—
		4	Y	3.8	-6.8	-0.9	Y	1.1	1.8
Chiricahua	Entrance Station	1	Y	0.7	-1.9	0.5	N	—	—
		2	Y	0.7	-2.5	1.2	Y	1.5	2.5
		3	Y	2.3	-3.0	-1.5	N	—	—
		4	Y	1.7	-2.4	-1.1	Y	2.7	4.0
Craters of the Moon	Visitor Center	1	Y	2.3	1.2	3.3	N	—	—
		2	Y	0.4	-3.6	4.5	Y	0.9	2.0
		3	Y	1.2	-0.8	3.2	Y	0.7	1.8
		4	Y	3.1	1.7	4.5	N	—	—
Denali	Headquarters	1	Y	0.8	-2.5	0.8	N	—	—
		2	Y	1.2	-2.1	-0.2	Y	1.0	2.0
		3	Y	1.3	-2.4	-0.1	N	—	—
		4	Y	0.4	-1.4	0.5	Y	6.1	6.3
Death Valley	Park Village	1	Y	0.0	-2.1	2.0	Y	3.3	5.3
		2	Y	0.5	-2.5	1.5	Y	2.4	3.3
		3	Y	0.6	-2.1	1.0	N	—	—
		4	Y	1.3	-3.1	0.5	Y	1.8	3.7
Glacier Great	West Glacier Horse Stables	1	Y	0.0	-1.9	1.9	N	—	—
		2	Y	0.4	-3.9	3.1	Y	0.6	1.5
		3	Y	0.6	-2.9	1.7	N	—	—
		4	Y	0.1	-1.3	1.5	Y	3.2	4.0
Basin Grand	Maintenance Yard	1	Y	0.1	-4.9	4.8	Y	3.8	6.7
		2	Y	0.6	-2.9	1.7	Y	3.1	4.0
		3	Y	1.6	0.2	3.1	N	—	—
		4	Y	1.9	0.6	3.2	Y	2.9	3.5
Canyon	The Abyss	1	Y	2.5	0.9	4.1	N	—	—
		2	Y	1.4	-4.8	2.1	Y	1.0	2.3
		3	Y	3.4	-4.0	-2.7	N	—	—
		4	Y	3.4	-4.0	-2.7	Y	1.7	3.8
Great Smoky Mountains	Clingmans Dome	1	—	—	—	—	—	—	—
		2	Y	0.2	-2.9	2.5	Y	5.8	12.3
		3	Y	0.3	-2.5	1.9	Y	0.8	1.5
		4	Y	3.2	-8.4	2.0	Y	0.6	1.8

Table 2 (continued). Ozone Analyzer Precision and Verification Summary
Sites Operated by the National Park Service
National Park Service Gaseous Pollutant Monitoring Program, 2012

			Precision				As-found Verification Multi-Point		
National Park Unit	Site Name	Calendar Quarter	Required No. of Precision Checks Met?[1]	Avg. Absolute Percent Difference[3,4]	Lower 95% Probability Limit[6]	Upper 95% Probability Limit[6]	Accuracy Check Performed During the Quarter?[2]	Avg. Absolute Percent Difference[3,4]	Max. Absolute Percent Difference[5]
Great Smoky Mountains	Cove Mountain	1	Y	0.3	-1.4	0.8	N	—	—
		2	Y	1.2	-2.6	0.3	Y	1.6	3.6
		3	Y	0.9	-2.2	0.5	N	—	—
		4	Y	0.9	-2.3	0.6	Y	3.0	4.4
Great Smoky Mountains	Look Rock	1	Y	0.4	-1.7	1.0	Y	5.7	7.5
		2	Y	0.2	-1.7	1.2	Y	2.3	5.5
		3	Y	0.6	-0.9	2.1	Y	5.3	6.1
		4	Y	2.0	0.7	3.3	Y	2.5	4.4
Grand Teton	Science School	1	Y	1.8	1.3	2.4	N	—	—
		2	Y	0.6	-0.9	2.1	Y	1.8	2.7
		3	Y	0.1	-0.9	0.8	Y	0.4	1.1
		4	Y	0.4	-0.1	1.0	N	—	—
Joshua Tree	Black Rock	1	Y	1.4	-3.6	0.9	Y	1.1	5.0
		2	Y	1.1	-3.4	1.1	Y	1.3	3.1
		3	Y	5.6	-9.5	-1.8	N	—	—
		4	Y	3.0	-4.2	-1.8	Y	0.7	1.0
Joshua Tree	Cottonwood Canyon	1	Y	1.5	-2.6	5.6	N	—	—
		2	Y	2.7	-3.8	9.1	N	—	—
		3	Y	3.3	-1.8	8.3	N	—	—
		4	Y	3.9	0.3	7.6	Y	8.4	24.4
Lassen Volcanic	Manzanita Lake Fire Stn.	1	Y	2.0	0.8	3.2	N	—	—
		2	Y	0.1	-2.3	2.5	Y	0.8	1.8
		3	Y	1.1	-0.3	2.6	N	—	—
		4	Y	0.3	-1.5	2.0	Y	4.3	5.4
Mammoth Cave	Houchin Meadow	1	Y	3.3	-4.8	-1.9	Y	2.2	5.6
		2	Y	2.9	-6.0	0.2	Y	2.2	3.6
		3	Y	1.3	-3.2	0.7	Y	5.1	11.1
		4	Y	1.7	-3.1	-0.3	Y	1.0	2.8
Mesa Verde	Resource Mngment Area	1	Y	0.1	-4.1	4.0	Y	1.2	1.7
		2	Y	0.8	-3.6	2.0	N	—	—
		3	Y	1.6	-1.1	4.4	N	—	—
		4	Y	1.7	0.7	2.7	Y	1.0	1.8
Mount Rainier	Tahoma Woods	1	Y	0.4	-6.5	7.3	N	—	—
		2	Y	1.3	-3.1	5.8	Y	3.9	4.3
		3	Y	1.2	-4.4	6.8	N	—	—
		4	Y	1.5	-2.5	5.6	Y	0.5	1.0
Petrified Forest	South Entrance	1	Y	0.2	-1.1	1.6	N	—	—
		2	Y	2.3	-9.9	5.4	Y	2.4	4.2
		3	Y	0.7	-0.2	1.6	N	—	—
		4	Y	1.1	0.0	2.3	Y	1.4	3.7

Table 2 (continued). Ozone Analyzer Precision and Verification Summary
Sites Operated by the National Park Service
National Park Service Gaseous Pollutant Monitoring Program, 2012

			Precision				As-found Verification Multi-Point		
National Park Unit	Site Name	Calendar Quarter	Required No. of Precision Checks Met?[1]	Avg. Absolute Percent Difference[3,4]	Lower 95% Probability Limit[6]	Upper 95% Probability Limit[6]	Accuracy Check Performed During the Quarter?[2]	Avg. Absolute Percent Difference[3,4]	Max. Absolute Percent Difference [5]
Pinnacles	SW of East Entrance Stn.	1	Y	1.6	-2.8	-0.5	Y	1.3	1.8
		2	Y	1.9	-3.4	-0.5	Y	1.4	2.9
		3	Y	1.9	-2.5	-1.3	N	—	—
		4	Y	1.7	-2.4	-1.1	Y	1.5	2.3
Rocky Mountain	Long's Peak	1	Y	2.9	-6.8	1.1	N	—	—
		2	Y	2.2	-6.5	2.1	Y	3.8	5.0
		3	Y	1.9	-5.4	1.5	Y	1.6	2.8
		4	Y	3.0	-7.4	1.3	N	—	—
Sequoia and Kings Canyon	Ash Mountain	1	Y	1.5	0.3	2.7	N	—	—
		2	Y	0.7	-1.3	2.6	Y	5.2	5.5
		3	Y	1.6	-2.5	-0.6	N	—	—
		4	Y	2.1	-3.4	-0.8	Y	2.4	3.7
Sequoia and Kings Canyon	Lower Kaweah	1	Y	0.8	-1.7	0.1	N	—	—
		2	Y	0.9	-3.0	1.2	Y	0.3	0.7
		3	Y	0.6	-2.2	0.9	N	—	—
		4	Y	1.7	0.1	3.2	Y	2.6	3.8
Shenandoah	Big Meadows	1	Y	1.6	-3.1	0.0	N	—	—
		2	Y	2.8	-5.6	0.1	Y	2.2	3.3
		3	Y	3.2	-6.4	0.0	N	—	—
		4	Y	2.1	-3.7	-0.5	Y	0.4	1.0
Voyageurs	Sullivan Bay	1	Y	0.7	-0.5	1.8	N	—	—
		2	Y	0.7	-0.2	1.7	Y	3.1	4.5
		3	Y	1.0	0.4	1.7	N	—	—
		4	Y	0.8	-0.2	1.8	Y	3.6	4.3
Yellowstone	Water Tank	1	Y	1.3	-3.3	0.7	N	—	—
		2	Y	0.8	-2.4	0.9	Y	0.3	0.9
		3	Y	0.4	-1.4	0.5	Y	0.7	1.1
		4	Y	0.7	-4.8	3.4	N	—	—
Yosemite	Turtleback Dome	1	Y	1.3	0.7	2.0	N	—	—
		2	Y	1.1	0.4	1.8	Y	2.1	2.9
		3	Y	0.1	-1.8	1.6	N	—	—
		4	Y	1.3	-2.1	-0.6	Y	7.0	22.8

Table 2 (continued). Ozone Analyzer Precision and Verification Summary
Sites Operated by the National Park Service
National Park Service Gaseous Pollutant Monitoring Program, 2012

			Precision				As-found Verification Multi-Point		
National Park Unit	**Site Name**	**Calendar Quarter**	**Required No. of Precision Checks Met?[1]**	**Avg. Absolute Percent Difference[3,4]**	**Lower 95% Probability Limit[6]**	**Upper 95% Probability Limit[6]**	**Accuracy Check Performed During the Quarter?[2]**	**Avg. Absolute Percent Difference[3,4]**	**Max. Absolute Percent Difference[5]**
Zion	Dalton's Wash	1	Y	3.2	-6.3	-0.2	Y	3.1	4.9
		2	Y	3.0	-4.8	-1.1	N	—	—
		3	Y	4.0	-7.4	-0.6	Y	0.7	1.1
		4	Y	1.2	-3.2	0.7	N	—	—

Operating agency key:

plain text = site operated by the National Park Service

italics = site operated by a state agency

<u>underline</u> = site operated by the National Park Service, but consisting of non-EPA certified portable instrumentation

Color shading key:

Ideal: indicates a percent difference within +/-5% or a probability limit within +/-10%

Acceptable: indicates a percent difference between +/-5.1-10% or a probability limit between +/-10.1-15%

Unacceptable: indicates a percent difference greater than +/-10% or a probability limit greater than +/-15%

1. Precision checks are required by the Environmental Protection Agency (EPA) of all pollutant analyzers collecting data which are to be submitted to the EPA Air Quality System (AQS). A precision check is performed by challenging the pollutant analyzer with a known concentration of gas from the pollutant transfer standard. This precision check must be performed at least every 14 days of monitoring operation. The percent difference between the analyzer and the transfer standard is then calculated.[3] According to NPS Standard Operating Procedures, the pollutant analyzer must respond within 10% of

2. Accuracy checks are required by the Environmental Protection Agency (EPA) of all pollutant analyzers collecting data which are to be submitted to the EPA Air Quality System (AQS). An accuracy check is performed by challenging the pollutant analyzer with a known concentration of gas from the pollutant transfer standard at several different points. The percent difference between the analyzer and the transfer standard is then calculated.[3] According to NPS Standard Operating Procedures, the pollutant analyzer must respond within 10% of the transfer standard. All accuracy checks reported here were performed by the reporting organization and not by an outside auditor.

3. Percent Difference = ((analyzer - transfer std)/transfer std)x100

4. Average Absolute Percent Difference is the mean of the absolute value of all individual precision check percent differences during the quarter, or the mean of the absolute value of all the percent differences from each point challenged during an accuracy check.

5. Maximum Absolute Percent Difference is the highest percent difference from the points of a multipoint (or accuracy) calibration.

6. Upper/Lower 95% Probability Limits = (Average Percent Difference)+/-(1.96)(Standard Deviation of precision check percent differences in the quarter). The probability limits represent the interval having a 95% chance of containing the true average percent difference. Probability limits must be within +/-15%.