

**Table 1a. Data Collection Statistics**  
**Sites Operated by the National Park Service**  
**National Park Service Gaseous Pollutant Monitoring Program, 2014**

| National Park Unit       | Site Name                  | Parameter Code       |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|--------------------------|----------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                          |                            | O3                   | SO2                  | CO                   | NOx                  | PM2.5                | PM10                 | VWD <sup>2</sup>     | SWS <sup>3</sup>     | TMP                  | RH                   | RNF                  | SOL                  | FLOW                 |
|                          |                            | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> |
| Big Bend                 | K-Bar Ranch Road           | 95.6                 | —                    | —                    | —                    | —                    | —                    | 98.9                 | 98.9                 | 99.3                 | 99.4                 | 76.3                 | 96.9                 | 99.0                 |
| Canyonlands              | Island in the Sky          | 96.3                 | —                    | —                    | —                    | —                    | —                    | 99.6                 | 99.6                 | 99.5                 | 99.6                 | 99.3                 | 99.6                 | 99.2                 |
| Chiricahua               | Entrance Station           | 97.1                 | —                    | —                    | —                    | —                    | —                    | 97.6                 | 97.6                 | 97.6                 | 97.6                 | 94.4                 | 97.7                 | 97.6                 |
| Craters of the Moon      | Visitor Center             | 96.7                 | —                    | —                    | —                    | —                    | —                    | 99.8                 | 99.8                 | 99.8                 | —                    | —                    | 96.8                 | —                    |
| Denali                   | Headquarters               | 99.5                 | —                    | —                    | —                    | —                    | —                    | 96.3                 | 96.3                 | 99.9                 | 91.5                 | 99.9                 | 100.0                | 99.6                 |
| Death Valley             | Park Village               | 99.4                 | —                    | —                    | —                    | —                    | —                    | 99.7                 | 99.7                 | 99.7                 | —                    | —                    | —                    | —                    |
| Dinosaur                 | West Entrance Housing      | 93.3                 | —                    | —                    | —                    | —                    | —                    | 98.8                 | 98.8                 | 99.1                 | —                    | 82.5                 | 99.2                 | 99.4                 |
| Everglades               | Beard Center               | —                    | —                    | —                    | —                    | —                    | —                    | 99.1                 | 99.1                 | 99.3                 | 99.3                 | 90.5                 | 99.6                 | 86.8                 |
| Fort Laramie             | North Boundary             | —                    | —                    | —                    | —                    | 60.5                 | —                    | —                    | 99.8                 | 76.2                 | 76.2                 | —                    | —                    | —                    |
| Glacier                  | West Glacier Horse Stables | 94.5                 | —                    | —                    | —                    | —                    | —                    | 97.3                 | 97.4                 | 99.7                 | —                    | —                    | 99.7                 | 97.4                 |
| Great Basin              | Maintenance Yard           | 95.4                 | —                    | —                    | —                    | —                    | —                    | 98.2                 | 98.2                 | 99.7                 | 99.7                 | 99.2                 | 99.3                 | 99.7                 |
| Grand Canyon             | The Abyss                  | 97.4                 | —                    | —                    | —                    | —                    | —                    | 99.6                 | 99.6                 | 99.6                 | 99.6                 | 99.3                 | 99.8                 | 99.7                 |
| Great Smoky Mountains    | Cades Cove                 | 99.7                 | —                    | —                    | —                    | —                    | —                    | 99.8                 | 99.8                 | 97.4                 | 97.4                 | 99.6                 | 99.9                 | —                    |
| Great Smoky Mountains    | Clingmans Dome             | 72.9                 | —                    | —                    | —                    | —                    | —                    | 73.7                 | 73.7                 | 73.1                 | 72.7                 | 65.3                 | 73.7                 | —                    |
| Great Smoky Mountains    | Cove Mountain              | 98.9                 | —                    | —                    | —                    | —                    | —                    | 99.0                 | 99.0                 | 95.7                 | 95.7                 | 99.6                 | —                    | —                    |
| Great Smoky Mountains    | Look Rock NCORE            | —                    | 74.5                 | 70.5                 | —                    | —                    | —                    | —                    | —                    | —                    | —                    | —                    | —                    | —                    |
| Great Smoky Mountains    | Look Rock                  | 99.6                 | —                    | —                    | —                    | —                    | —                    | 99.7                 | 99.7                 | 99.7                 | 99.7                 | 99.4                 | 99.7                 | 99.2                 |
| Grand Teton              | Science School             | 99.3                 | —                    | —                    | —                    | —                    | —                    | 99.6                 | 99.6                 | 99.1                 | 99.1                 | 99.5                 | 99.9                 | —                    |
| Hawaii Volcanoes         | Observatory                | —                    | 97.6                 | —                    | —                    | 20.6                 | —                    | 97.2                 | 97.2                 | 97.3                 | 97.3                 | 99.8                 | —                    | —                    |
| Hawaii Volcanoes         | Visitor Center             | —                    | 99.4                 | —                    | —                    | —                    | —                    | 99.5                 | 99.5                 | 99.5                 | 99.5                 | 96.8                 | 99.5                 | —                    |
| Joshua Tree              | Black Rock                 | 99.7                 | —                    | —                    | —                    | —                    | —                    | 87.4                 | 99.1                 | 99.8                 | 99.9                 | 99.5                 | 99.9                 | 99.6                 |
| Joshua Tree              | Cottonwood Canyon          | 74.7                 | —                    | —                    | —                    | —                    | 34.7                 | 81.3                 | 90.3                 | 90.4                 | 90.4                 | 86.6                 | 90.4                 | —                    |
| Lassen Volcanic          | Manzanita Lake Fire Stn.   | 99.2                 | —                    | —                    | —                    | —                    | —                    | 97.6                 | 97.6                 | 99.4                 | 93.8                 | 99.1                 | 99.5                 | 99.0                 |
| Mammoth Cave             | Houchin Meadow             | 99.1                 | —                    | 95.3                 | —                    | —                    | —                    | 100.0                | 100.0                | 99.8                 | 99.9                 | 99.3                 | 100.0                | 99.8                 |
| Mesa Verde               | Resource Mngment Area      | 91.3                 | —                    | —                    | —                    | —                    | —                    | 99.9                 | 99.9                 | 99.9                 | 99.9                 | 98.7                 | 99.9                 | 99.6                 |
| Petrified Forest         | South Entrance             | 99.4                 | —                    | —                    | —                    | —                    | —                    | 99.8                 | 99.8                 | 99.8                 | —                    | —                    | 100.0                | 99.6                 |
| Pinnacles                | SW of East Entrance Stn.   | 99.3                 | —                    | —                    | —                    | —                    | —                    | 92.5                 | 98.7                 | 99.7                 | 96.9                 | 99.6                 | 99.7                 | 99.1                 |
| Rocky Mountain           | Long's Peak                | 94.5                 | —                    | —                    | —                    | —                    | —                    | 64.2                 | 99.2                 | 99.2                 | 96.3                 | 99.5                 | 97.6                 | 99.3                 |
| Sequoia and Kings Canyon | Ash Mountain               | 97.0                 | —                    | —                    | —                    | 67.1                 | —                    | 97.3                 | 97.3                 | 97.3                 | 97.3                 | 75.5                 | 97.5                 | 97.5                 |
| Sequoia and Kings Canyon | Lower Kaweah               | 99.5                 | —                    | —                    | —                    | —                    | —                    | 99.4                 | 99.4                 | 99.3                 | 99.4                 | 64.7                 | 99.5                 | —                    |
| Shenandoah               | Big Meadows                | 98.7                 | —                    | —                    | —                    | —                    | —                    | 96.4                 | 96.4                 | 98.9                 | 98.9                 | 95.2                 | 99.0                 | 98.7                 |
| Theodore Roosevelt       | Painted Cany. VC           | —                    | —                    | —                    | —                    | —                    | —                    | 99.3                 | 99.3                 | 99.9                 | 99.9                 | 99.9                 | 100.0                | 94.2                 |
| Voyageurs                | Sullivan Bay               | 97.8                 | —                    | —                    | —                    | —                    | —                    | 97.9                 | 97.9                 | 99.2                 | 99.7                 | 99.8                 | 97.4                 | 99.6                 |
| Wind Cave                | Visitor Center             | —                    | —                    | —                    | —                    | —                    | —                    | 99.7                 | 99.7                 | 99.8                 | 99.8                 | 99.9                 | 100.0                | 99.6                 |
| Yellowstone              | Old Faithful Snow Lodge    | —                    | —                    | 90.3                 | —                    | 93.2                 | —                    | 98.2                 | 98.2                 | 99.8                 | 99.9                 | —                    | —                    | —                    |
| Yellowstone              | Water Tank                 | 98.7                 | —                    | —                    | —                    | —                    | —                    | 97.0                 | 97.0                 | 98.6                 | 98.5                 | 98.5                 | 96.3                 | 99.1                 |
| Yosemite                 | Turtleback Dome            | 98.3                 | —                    | —                    | —                    | —                    | —                    | 96.8                 | 99.6                 | 99.9                 | 100.0                | 99.7                 | 100.0                | 99.2                 |

**Table 1a (continued). Data Collection Statistics**  
**Sites Operated by the National Park Service**  
**National Park Service Gaseous Pollutant Monitoring Program, 2014**

| National Park Unit                     | Site Name     | Parameter Code       |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|----------------------------------------|---------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                        |               | O3                   | SO2                  | CO                   | NOx                  | PM2.5                | PM10                 | VWD <sup>2</sup>     | SWS <sup>3</sup>     | TMP                  | RH                   | RNF                  | SOL                  | FLOW                 |
|                                        |               | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> |
| Zion                                   | Dalton's Wash | 92.4                 | —                    | —                    | —                    | —                    | —                    | 99.7                 | 99.7                 | 99.9                 | —                    | 99.6                 | 99.9                 | —                    |
| <b>Average Network Data Collection</b> |               | <b>96.2</b>          | <b>88.6</b>          | <b>85.4</b>          |                      | <b>79.6</b>          | <b>84.6</b>          | <b>96.2</b>          | <b>98.1</b>          | <b>98.0</b>          | <b>97.1</b>          | <b>94.9</b>          | <b>98.3</b>          | <b>98.4</b>          |

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<sub>3</sub> and SO<sub>2</sub>, 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, 2014**

| National Park Unit                     | Site Name     | Parameter Code       |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|----------------------------------------|---------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                        |               | O3                   | SO2                  | CO                   | NOx                  | PM2.5                | PM10                 | VWD <sup>2</sup>     | SWS <sup>3</sup>     | TMP                  | RH                   | RNF                  | SOL                  | FLOW                 |
|                                        |               | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> |
| Meeker                                 | Plant Science | 98.5                 | —                    | —                    | 99.4                 | 70.0                 | —                    | 99.3                 | 99.3                 | 99.8                 | 99.8                 | 99.7                 | 99.9                 | 85.3                 |
| Rangely                                | Golf Course   | 97.0                 | —                    | —                    | 99.1                 | 88.5                 | —                    | 99.5                 | 99.5                 | 99.7                 | 99.7                 | 95.3                 | 100.0                | —                    |
| <b>Average Network Data Collection</b> |               | <b>97.7</b>          |                      |                      | <b>99.2</b>          | <b>79.2</b>          |                      | <b>99.4</b>          | <b>99.4</b>          | <b>99.8</b>          | <b>99.8</b>          | <b>97.5</b>          | <b>99.9</b>          | <b>85.3</b>          |

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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.

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**Table 1c. Data Collection Statistics**  
**Sites Operated by the NPS for the USFS**  
**National Park Service Gaseous Pollutant Monitoring Program, 2014**

| National Park Unit                     | Site Name      | Parameter Code       |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|----------------------------------------|----------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                        |                | O3                   | SO2                  | CO                   | NOx                  | PM2.5                | PM10                 | VWD <sup>2</sup>     | SWS <sup>3</sup>     | TMP                  | RH                   | RNF                  | SOL                  | FLOW                 |
|                                        |                | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> |
| Escalante                              | Visitor Center | 99.7                 | —                    | —                    | —                    | —                    | —                    | 99.8                 | 99.8                 | 99.8                 | 99.8                 | 99.9                 | 99.9                 | —                    |
| Walden - Colorado                      | Chandler Ranch | 99.6                 | 99.9                 | 96.2                 | 94.0                 | —                    | 99.8                 | 99.5                 | 92.4                 | 99.9                 | 99.9                 | —                    | 99.9                 | —                    |
| <b>Average Network Data Collection</b> |                | <b>99.7</b>          | <b>99.9</b>          | <b>96.2</b>          | <b>94.0</b>          |                      | <b>99.8</b>          | <b>99.7</b>          | <b>96.1</b>          | <b>99.9</b>          | <b>99.9</b>          | <b>99.9</b>          | <b>99.9</b>          |                      |

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

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**Table 1d. Data Collection Statistics**  
**Portable Ozone Monitoring Systems (POMS)**  
**National Park Service Gaseous Pollutant Monitoring Program, 2014**

| National Park Unit                     | Site Name          | Parameter Code       |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|----------------------------------------|--------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                        |                    | O3                   | SO2                  | CO                   | NOx                  | PM2.5                | PM10                 | VWD <sup>2</sup>     | SWS <sup>3</sup>     | TMP                  | RH                   | RNF                  | SOL                  | FLOW                 |
|                                        |                    | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> | % valid <sup>1</sup> |
| <u>Abraham Lincoln Birthplace</u>      | Visitor's Center   | 74.6                 | —                    | —                    | —                    | —                    | —                    | —                    | 95.4                 | 95.5                 | 95.5                 | —                    | —                    | —                    |
| <u>Carlsbad Caverns</u>                | Maintenance Area   | 64.5                 | —                    | —                    | —                    | —                    | —                    | —                    | 89.8                 | 87.8                 | 88.3                 | 89.7                 | 89.4                 | 0.0                  |
| <u>Cumberland Gap</u>                  | Hensley Settlement | 100.0                | —                    | —                    | —                    | —                    | —                    | —                    | 100.0                | 100.0                | 100.0                | 100.0                | 100.0                | —                    |
| <u>Joshua Tree</u>                     | Pinto Wells        | 99.8                 | —                    | —                    | —                    | —                    | —                    | —                    | 99.8                 | 99.8                 | 99.8                 | —                    | 99.8                 | —                    |
| <u>Kings Mountain</u>                  | Brown's Mountain   | 86.7                 | —                    | —                    | —                    | —                    | —                    | —                    | 97.1                 | 97.3                 | 97.3                 | 32.8                 | 97.3                 | —                    |
| <u>Mojave</u>                          | Kelso Mountains    | 91.6                 | —                    | —                    | —                    | —                    | —                    | —                    | 99.9                 | 99.0                 | 99.0                 | 100.0                | 98.9                 | —                    |
| <u>Rocky Mountain</u>                  | Trail Ridge        | 99.6                 | —                    | —                    | —                    | —                    | —                    | —                    | 99.6                 | 99.6                 | 99.6                 | 99.6                 | 99.6                 | —                    |
| <b>Average Network Data Collection</b> |                    | <b>88.6</b>          |                      |                      |                      |                      |                      |                      | <b>97.6</b>          | <b>97.2</b>          | <b>97.3</b>          | <b>82.9</b>          | <b>97.7</b>          |                      |

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**Table 2. Ozone Analyzer Precision and Verification Summary**  
**Sites Operated by the National Park Service**  
**National Park Service Gaseous Pollutant Monitoring Program, 2014**

| National Park Unit  | Site Name                  | Calendar Quarter | Precision                                          |                                                 |                                          |                                          | As-found Verification Multi-Point                         |                                                 |                                               |
|---------------------|----------------------------|------------------|----------------------------------------------------|-------------------------------------------------|------------------------------------------|------------------------------------------|-----------------------------------------------------------|-------------------------------------------------|-----------------------------------------------|
|                     |                            |                  | Required No. of Precision Checks Met? <sup>1</sup> | Avg. Absolute Percent Difference <sup>3,4</sup> | Lower 95% Probability Limit <sup>6</sup> | Upper 95% Probability Limit <sup>6</sup> | Accuracy Check Performed During the Quarter? <sup>2</sup> | Avg. Absolute Percent Difference <sup>3,4</sup> | Max. Absolute Percent Difference <sup>5</sup> |
| Big Bend            | K-Bar Ranch Road           | 1                | Y                                                  | 0.1                                             | -1.0                                     | 0.7                                      | Y                                                         | 1.0                                             | 2.1                                           |
|                     |                            | 2                | Y                                                  | 1.5                                             | -3.5                                     | 0.6                                      | Y                                                         | 3.2                                             | 3.6                                           |
|                     |                            | 3                | Y                                                  | 2.4                                             | -4.5                                     | -0.3                                     | N                                                         | —                                               | —                                             |
|                     |                            | 4                | Y                                                  | 1.6                                             | -3.5                                     | 0.2                                      | Y                                                         | 1.0                                             | 1.6                                           |
| Canyonlands         | Island in the Sky          | 1                | Y                                                  | 2.3                                             | -0.3                                     | 4.8                                      | N                                                         | —                                               | —                                             |
|                     |                            | 2                | Y                                                  | 0.8                                             | -3.0                                     | 4.6                                      | Y                                                         | 0.6                                             | 1.4                                           |
|                     |                            | 3                | Y                                                  | 3.3                                             | -6.3                                     | -0.4                                     | N                                                         | —                                               | —                                             |
|                     |                            | 4                | Y                                                  | 1.9                                             | -1.9                                     | 5.7                                      | N                                                         | —                                               | —                                             |
| Chiricahua          | Entrance Station           | 1                | Y                                                  | 0.5                                             | -0.1                                     | 1.0                                      | N                                                         | —                                               | —                                             |
|                     |                            | 2                | Y                                                  | 2.3                                             | -5.2                                     | 0.6                                      | Y                                                         | 5.9                                             | 6.6                                           |
|                     |                            | 3                | Y                                                  | 5.2                                             | -6.2                                     | -4.2                                     | N                                                         | —                                               | —                                             |
|                     |                            | 4                | Y                                                  | 2.1                                             | -5.1                                     | 0.9                                      | Y                                                         | 1.2                                             | 1.8                                           |
| Craters of the Moon | Visitor Center             | 1                | Y                                                  | 4.0                                             | -6.1                                     | -1.9                                     | N                                                         | —                                               | —                                             |
|                     |                            | 2                | Y                                                  | 3.0                                             | -8.1                                     | 2.0                                      | Y                                                         | 3.5                                             | 3.7                                           |
|                     |                            | 3                | Y                                                  | 0.4                                             | -0.8                                     | 1.5                                      | N                                                         | —                                               | —                                             |
|                     |                            | 4                | Y                                                  | 0.8                                             | -0.6                                     | 2.1                                      | Y                                                         | 2.7                                             | 2.9                                           |
| Denali              | Headquarters               | 1                | Y                                                  | 1.4                                             | -2.8                                     | -0.1                                     | N                                                         | —                                               | —                                             |
|                     |                            | 2                | Y                                                  | 0.1                                             | -3.3                                     | 3.1                                      | Y                                                         | 1.8                                             | 2.6                                           |
|                     |                            | 3                | Y                                                  | 1.8                                             | 1.2                                      | 2.4                                      | N                                                         | —                                               | —                                             |
|                     |                            | 4                | Y                                                  | 0.1                                             | -3.7                                     | 4.0                                      | Y                                                         | 2.0                                             | 2.8                                           |
| Death Valley        | Park Village               | 1                | Y                                                  | 3.1                                             | -3.9                                     | -2.3                                     | N                                                         | —                                               | —                                             |
|                     |                            | 2                | Y                                                  | 3.3                                             | -4.4                                     | -2.2                                     | N                                                         | —                                               | —                                             |
|                     |                            | 3                | Y                                                  | 3.4                                             | -4.5                                     | -2.2                                     | Y                                                         | 1.4                                             | 2.2                                           |
|                     |                            | 4                | Y                                                  | 2.7                                             | -3.7                                     | -1.6                                     | N                                                         | —                                               | —                                             |
| Dinosaur            | West Entrance Housing      | 1                | Y                                                  | 0.6                                             | -5.6                                     | 6.7                                      | Y                                                         | 10.6                                            | 10.8                                          |
|                     |                            | 2                | Y                                                  | 0.3                                             | -1.4                                     | 2.1                                      | Y                                                         | 0.8                                             | 1.4                                           |
|                     |                            | 3                | Y                                                  | 1.0                                             | -1.9                                     | 0.0                                      | Y                                                         | 0.5                                             | 0.9                                           |
|                     |                            | 4                | Y                                                  | 1.0                                             | -3.7                                     | 1.7                                      | N                                                         | —                                               | —                                             |
| Glacier             | West Glacier Horse Stables | 1                | Y                                                  | 0.7                                             | -0.6                                     | 1.9                                      | N                                                         | —                                               | —                                             |
|                     |                            | 2                | Y                                                  | 1.2                                             | -4.5                                     | 2.1                                      | Y                                                         | 0.2                                             | 0.5                                           |
|                     |                            | 3                | N                                                  | 3.1                                             | -6.5                                     | 0.3                                      | N                                                         | —                                               | —                                             |
|                     |                            | 4                | Y                                                  | 3.1                                             | -7.1                                     | 0.9                                      | Y                                                         | 0.7                                             | 1.8                                           |
| Great Basin         | Maintenance Yard           | 1                | Y                                                  | 1.1                                             | -2.8                                     | 0.6                                      | N                                                         | —                                               | —                                             |
|                     |                            | 2                | Y                                                  | 1.9                                             | -4.3                                     | 0.5                                      | N                                                         | —                                               | —                                             |
|                     |                            | 3                | Y                                                  | 2.6                                             | -4.2                                     | -1.0                                     | Y                                                         | 2.7                                             | 8.9                                           |
|                     |                            | 4                | Y                                                  | 3.2                                             | -5.6                                     | -0.8                                     | N                                                         | —                                               | —                                             |
| Grand Canyon        | The Abyss                  | 1                | Y                                                  | 0.8                                             | -1.7                                     | 0.0                                      | N                                                         | —                                               | —                                             |
|                     |                            | 2                | Y                                                  | 3.2                                             | -5.5                                     | -0.8                                     | Y                                                         | 1.9                                             | 2.9                                           |
|                     |                            | 3                | Y                                                  | 5.7                                             | -6.7                                     | -4.8                                     | N                                                         | —                                               | —                                             |
|                     |                            | 4                | Y                                                  | 1.4                                             | -6.2                                     | 3.4                                      | Y                                                         | 1.3                                             | 2.5                                           |

**Table 2 (continued). Ozone Analyzer Precision and Verification Summary**  
**Sites Operated by the National Park Service**  
**National Park Service Gaseous Pollutant Monitoring Program, 2014**

| National Park Unit    | Site Name                | Calendar Quarter | Precision                                          |                                                 |                                          |                                          | As-found Verification Multi-Point                         |                                                 |                                               |
|-----------------------|--------------------------|------------------|----------------------------------------------------|-------------------------------------------------|------------------------------------------|------------------------------------------|-----------------------------------------------------------|-------------------------------------------------|-----------------------------------------------|
|                       |                          |                  | Required No. of Precision Checks Met? <sup>1</sup> | Avg. Absolute Percent Difference <sup>3,4</sup> | Lower 95% Probability Limit <sup>6</sup> | Upper 95% Probability Limit <sup>6</sup> | Accuracy Check Performed During the Quarter? <sup>2</sup> | Avg. Absolute Percent Difference <sup>3,4</sup> | Max. Absolute Percent Difference <sup>5</sup> |
| Great Smoky Mountains | Clingmans Dome           | 1                | —                                                  | —                                               | —                                        | —                                        | —                                                         | —                                               | —                                             |
|                       |                          | 2                | Y                                                  | 0.1                                             | -4.1                                     | 4.0                                      | Y                                                         | 2.9                                             | 5.0                                           |
|                       |                          | 3                | Y                                                  | 3.0                                             | 0.4                                      | 5.6                                      | Y                                                         | 3.5                                             | 5.1                                           |
|                       |                          | 4                | Y                                                  | 2.3                                             | -4.1                                     | 8.8                                      | Y                                                         | 4.2                                             | 4.9                                           |
| Great Smoky Mountains | Cove Mountain            | 1                | Y                                                  | 0.3                                             | -1.3                                     | 1.8                                      | N                                                         | —                                               | —                                             |
|                       |                          | 2                | Y                                                  | 1.1                                             | -0.8                                     | 2.9                                      | Y                                                         | 1.6                                             | 2.7                                           |
|                       |                          | 3                | Y                                                  | 1.5                                             | 0.6                                      | 2.3                                      | Y                                                         | 4.9                                             | 7.1                                           |
|                       |                          | 4                | Y                                                  | 0.6                                             | -3.6                                     | 4.7                                      | Y                                                         | 3.6                                             | 3.8                                           |
| Great Smoky Mountains | Look Rock                | 1                | Y                                                  | 1.8                                             | 1.1                                      | 2.5                                      | Y                                                         | 0.0                                             | 0.0                                           |
|                       |                          | 2                | Y                                                  | 0.8                                             | -0.3                                     | 1.9                                      | Y                                                         | 0.7                                             | 2.5                                           |
|                       |                          | 3                | Y                                                  | 0.2                                             | -0.4                                     | 0.9                                      | Y                                                         | 1.1                                             | 2.2                                           |
|                       |                          | 4                | Y                                                  | 0.9                                             | -4.0                                     | 2.3                                      | Y                                                         | 0.5                                             | 1.1                                           |
| Grand Teton           | Science School           | 1                | Y                                                  | 1.1                                             | -1.7                                     | -0.5                                     | N                                                         | —                                               | —                                             |
|                       |                          | 2                | Y                                                  | 1.6                                             | -3.0                                     | -0.3                                     | Y                                                         | 2.0                                             | 2.4                                           |
|                       |                          | 3                | Y                                                  | 2.4                                             | -3.0                                     | -1.7                                     | N                                                         | —                                               | —                                             |
|                       |                          | 4                | Y                                                  | 2.9                                             | -4.0                                     | -1.8                                     | Y                                                         | 0.5                                             | 0.9                                           |
| Joshua Tree           | Black Rock               | 1                | Y                                                  | 3.4                                             | -4.3                                     | -2.6                                     | N                                                         | —                                               | —                                             |
|                       |                          | 2                | Y                                                  | 0.7                                             | -6.0                                     | 4.6                                      | Y                                                         | 1.7                                             | 2.7                                           |
|                       |                          | 3                | Y                                                  | 0.3                                             | -0.8                                     | 1.3                                      | N                                                         | —                                               | —                                             |
|                       |                          | 4                | Y                                                  | 0.3                                             | -1.9                                     | 1.3                                      | Y                                                         | 2.2                                             | 2.7                                           |
| Joshua Tree           | Cottonwood Canyon        | 1                | N                                                  | 5.9                                             | -11.2                                    | -0.6                                     | N                                                         | —                                               | —                                             |
|                       |                          | 2                | Y                                                  | 2.1                                             | -6.8                                     | 11.1                                     | Y                                                         | 7.1                                             | 7.8                                           |
|                       |                          | 3                | N                                                  | 3.0                                             | -5.7                                     | -0.4                                     | N                                                         | —                                               | —                                             |
|                       |                          | 4                | N                                                  | 1.8                                             | -6.6                                     | 3.0                                      | Y                                                         | 1.0                                             | 2.2                                           |
| Lassen Volcanic       | Manzanita Lake Fire Stn. | 1                | N                                                  | 0.9                                             | -1.7                                     | 0.0                                      | N                                                         | —                                               | —                                             |
|                       |                          | 2                | Y                                                  | 1.2                                             | -2.6                                     | 0.2                                      | Y                                                         | 3.7                                             | 4.7                                           |
|                       |                          | 3                | Y                                                  | 2.0                                             | -2.9                                     | -1.1                                     | N                                                         | —                                               | —                                             |
|                       |                          | 4                | Y                                                  | 0.5                                             | -2.4                                     | 1.5                                      | Y                                                         | 2.3                                             | 3.3                                           |
| Mammoth Cave          | Houchin Meadow           | 1                | Y                                                  | 1.4                                             | -3.0                                     | 0.3                                      | N                                                         | —                                               | —                                             |
|                       |                          | 2                | Y                                                  | 1.7                                             | -4.5                                     | 1.1                                      | Y                                                         | 2.0                                             | 3.0                                           |
|                       |                          | 3                | Y                                                  | 1.4                                             | -2.8                                     | -0.1                                     | Y                                                         | 1.7                                             | 2.8                                           |
|                       |                          | 4                | Y                                                  | 1.4                                             | -2.5                                     | -0.4                                     | Y                                                         | 1.8                                             | 2.9                                           |
| Mesa Verde            | Resource Mngmt Area      | 1                | Y                                                  | 2.9                                             | 1.6                                      | 4.2                                      | N                                                         | —                                               | —                                             |
|                       |                          | 2                | Y                                                  | 2.2                                             | 1.4                                      | 3.0                                      | N                                                         | —                                               | —                                             |
|                       |                          | 3                | Y                                                  | 2.0                                             | 1.1                                      | 2.8                                      | N                                                         | —                                               | —                                             |
|                       |                          | 4                | N                                                  | 3.0                                             | 0.7                                      | 5.2                                      | N                                                         | —                                               | —                                             |
| Petrified Forest      | South Entrance           | 1                | Y                                                  | 1.1                                             | 0.4                                      | 1.9                                      | N                                                         | —                                               | —                                             |
|                       |                          | 2                | Y                                                  | 0.0                                             | -0.8                                     | 0.9                                      | Y                                                         | 0.9                                             | 1.6                                           |
|                       |                          | 3                | Y                                                  | 1.3                                             | -2.1                                     | -0.5                                     | N                                                         | —                                               | —                                             |
|                       |                          | 4                | Y                                                  | 0.7                                             | -1.7                                     | 0.3                                      | Y                                                         | 0.3                                             | 0.9                                           |

**Table 2 (continued). Ozone Analyzer Precision and Verification Summary**  
**Sites Operated by the National Park Service**  
**National Park Service Gaseous Pollutant Monitoring Program, 2014**

| National Park Unit       | Site Name                | Calendar Quarter | Precision                                          |                                                 |                                          |                                          | As-found Verification Multi-Point                         |                                                 |                                               |
|--------------------------|--------------------------|------------------|----------------------------------------------------|-------------------------------------------------|------------------------------------------|------------------------------------------|-----------------------------------------------------------|-------------------------------------------------|-----------------------------------------------|
|                          |                          |                  | Required No. of Precision Checks Met? <sup>1</sup> | Avg. Absolute Percent Difference <sup>3,4</sup> | Lower 95% Probability Limit <sup>6</sup> | Upper 95% Probability Limit <sup>6</sup> | Accuracy Check Performed During the Quarter? <sup>2</sup> | Avg. Absolute Percent Difference <sup>3,4</sup> | Max. Absolute Percent Difference <sup>5</sup> |
| Pinnacles                | SW of East Entrance Stn. | 1                | Y                                                  | 3.0                                             | 2.3                                      | 3.7                                      | N                                                         | —                                               | —                                             |
|                          |                          | 2                | Y                                                  | 1.6                                             | 0.4                                      | 2.8                                      | Y                                                         | 2.5                                             | 3.2                                           |
|                          |                          | 3                | Y                                                  | 1.6                                             | 0.9                                      | 2.4                                      | N                                                         | —                                               | —                                             |
|                          |                          | 4                | Y                                                  | 0.9                                             | -0.5                                     | 2.2                                      | Y                                                         | 0.6                                             | 0.8                                           |
| Rocky Mountain           | Long's Peak              | 1                | Y                                                  | 0.2                                             | -0.9                                     | 0.6                                      | Y                                                         | 1.6                                             | 1.8                                           |
|                          |                          | 2                | Y                                                  | 1.0                                             | -4.4                                     | 2.4                                      | N                                                         | —                                               | —                                             |
|                          |                          | 3                | Y                                                  | 0.1                                             | -5.2                                     | 5.0                                      | Y                                                         | 5.0                                             | 5.7                                           |
|                          |                          | 4                | Y                                                  | 1.6                                             | -2.6                                     | -0.5                                     | N                                                         | —                                               | —                                             |
| Sequoia and Kings Canyon | Ash Mountain             | 1                | Y                                                  | 1.0                                             | -1.7                                     | -0.4                                     | N                                                         | —                                               | —                                             |
|                          |                          | 2                | Y                                                  | 1.0                                             | -2.0                                     | 0.0                                      | Y                                                         | 0.9                                             | 1.2                                           |
|                          |                          | 3                | Y                                                  | 0.9                                             | -1.4                                     | -0.5                                     | Y                                                         | 1.0                                             | 2.0                                           |
|                          |                          | 4                | Y                                                  | 1.2                                             | -2.1                                     | -0.4                                     | N                                                         | —                                               | —                                             |
| Sequoia and Kings Canyon | Lower Kaweah             | 1                | —                                                  | —                                               | —                                        | —                                        | —                                                         | —                                               | —                                             |
|                          |                          | 2                | Y                                                  | 0.7                                             | -3.7                                     | 2.3                                      | Y                                                         | 0.5                                             | 1.2                                           |
|                          |                          | 3                | Y                                                  | 1.1                                             | -2.2                                     | 0.1                                      | Y                                                         | 1.0                                             | 1.5                                           |
|                          |                          | 4                | Y                                                  | 0.5                                             | -1.1                                     | 0.1                                      | N                                                         | —                                               | —                                             |
| Shenandoah               | Big Meadows              | 1                | Y                                                  | 1.2                                             | -2.9                                     | 0.5                                      | Y                                                         | 0.4                                             | 1.5                                           |
|                          |                          | 2                | Y                                                  | 2.5                                             | -5.4                                     | 0.5                                      | N                                                         | —                                               | —                                             |
|                          |                          | 3                | Y                                                  | 2.7                                             | -7.2                                     | 1.9                                      | Y                                                         | 1.3                                             | 2.5                                           |
|                          |                          | 4                | Y                                                  | 1.5                                             | -0.3                                     | 3.3                                      | N                                                         | —                                               | —                                             |
| Voyageurs                | Sullivan Bay             | 1                | Y                                                  | 0.3                                             | -4.8                                     | 5.3                                      | Y                                                         | 1.2                                             | 3.3                                           |
|                          |                          | 2                | Y                                                  | 1.1                                             | 0.5                                      | 1.6                                      | Y                                                         | 1.1                                             | 1.4                                           |
|                          |                          | 3                | Y                                                  | 1.2                                             | 0.0                                      | 2.5                                      | N                                                         | —                                               | —                                             |
|                          |                          | 4                | Y                                                  | 1.7                                             | -2.7                                     | 6.0                                      | Y                                                         | 0.7                                             | 1.2                                           |
| Yellowstone              | Water Tank               | 1                | Y                                                  | 1.5                                             | -2.2                                     | -0.9                                     | N                                                         | —                                               | —                                             |
|                          |                          | 2                | Y                                                  | 1.7                                             | -3.0                                     | -0.5                                     | Y                                                         | 0.5                                             | 0.7                                           |
|                          |                          | 3                | Y                                                  | 0.8                                             | -1.8                                     | 0.2                                      | N                                                         | —                                               | —                                             |
|                          |                          | 4                | Y                                                  | 4.2                                             | -8.3                                     | -0.1                                     | Y                                                         | 1.7                                             | 2.1                                           |
| Yosemite                 | Turtleback Dome          | 1                | Y                                                  | 0.1                                             | -0.8                                     | 0.6                                      | N                                                         | —                                               | —                                             |
|                          |                          | 2                | Y                                                  | 0.6                                             | -2.4                                     | 1.1                                      | Y                                                         | 2.8                                             | 4.0                                           |
|                          |                          | 3                | Y                                                  | 0.4                                             | -1.9                                     | 1.1                                      | N                                                         | —                                               | —                                             |
|                          |                          | 4                | Y                                                  | 0.7                                             | -1.0                                     | 2.4                                      | Y                                                         | 5.0                                             | 5.4                                           |



**Table 2 (continued). Ozone Analyzer Precision and Verification Summary**  
**Sites Operated by the National Park Service**  
**National Park Service Gaseous Pollutant Monitoring Program, 2014**

| National Park Unit | Site Name     | Calendar Quarter | Precision                                          |                                                 |                                          |                                          | As-found Verification Multi-Point                         |                                                 |                                               |
|--------------------|---------------|------------------|----------------------------------------------------|-------------------------------------------------|------------------------------------------|------------------------------------------|-----------------------------------------------------------|-------------------------------------------------|-----------------------------------------------|
|                    |               |                  | Required No. of Precision Checks Met? <sup>1</sup> | Avg. Absolute Percent Difference <sup>3,4</sup> | Lower 95% Probability Limit <sup>6</sup> | Upper 95% Probability Limit <sup>6</sup> | Accuracy Check Performed During the Quarter? <sup>2</sup> | Avg. Absolute Percent Difference <sup>3,4</sup> | Max. Absolute Percent Difference <sup>5</sup> |
| Zion               | Dalton's Wash | 1                | Y                                                  | 0.2                                             | -3.5                                     | 3.9                                      | Y                                                         | 3.6                                             | 4.4                                           |
|                    |               | 2                | Y                                                  | 3.0                                             | -4.6                                     | -1.5                                     | N                                                         | —                                               | —                                             |
|                    |               | 3                | Y                                                  | 4.8                                             | -9.6                                     | 0.1                                      | Y                                                         | 4.3                                             | 7.4                                           |
|                    |               | 4                | Y                                                  | 4.0                                             | -6.2                                     | -1.8                                     | N                                                         | —                                               | —                                             |


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

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.<sup>3</sup> 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.<sup>3</sup> 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%.