



# GILA RIVER INDIAN COMMUNITY

## DEPARTMENT OF ENVIRONMENTAL QUALITY

July 22, 2016

*Sent via email to:* kurpius.meredith@epa.gov

Meredith Kurpius  
Chief, Technical Support Office  
USEPA R9 Air Division  
75 Hawthorne St.  
San Francisco, CA 94105

Re: 2015 GRIC Air Monitoring Network Review document  
Gila River Indian Community

Dear Meredith:

The Gila River Indian Community (GRIC) Department of Environmental Quality (DEQ) has developed an Ambient Air Monitoring Network Review document for the year 2015. GRIC DEQ presented the document to the members of the Gila River Indian Community through district community meetings. The presentations were well received by the GRIC members.

The *2015 Ambient Air Monitoring Network Review* is attached for your review and approval of the requested recommendations within the document.

Thank you. If you have any questions please contact me at [Leroy.WilliamsJR@gric.nsn.us](mailto:Leroy.WilliamsJR@gric.nsn.us) or (520) 796-3782.

Sincerely,

Leroy Williams,  
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cc w/ attachment: Ondrea Barber, GRIC DEQ  
Ryan Eberle, GRIC DEQ AQ Program  
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Randall Chang, USEPA R9

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# **Gila River Indian Community 2015 AMBIENT AIR MONITORING NETWORK REVIEW**

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**Gila River Indian Community  
Department of Environmental Quality  
Air Quality Air Monitoring Program  
July 2016**

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## DEFINITION OF TERMS

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|                               |  |
|-------------------------------|--|
| <b>AQMP:</b>                  | Air Quality Management Plan. The AQMP is a collection of tribal regulations and plans to achieve healthy air quality under the Clean Air Act. For GRIC, the AQMP is synonymous with the Tribal Implementation Plan (TIP).  |
| <b>AQP:</b>                   | Air Quality Program within the Gila River Indian Community's Department of Environmental Quality.  |
| <b>AQS:</b>                   | Environmental Protection Agency's Air Quality System   |
| <b>Attainment:</b>            | This refers to the NAAQS used to comply with the federal Clean Air Act. After several years of no violations of the NAAQS, the EPA can classify the area as in attainment for that pollutant.  |
| <b>CFR:</b>                   | Code of Federal Regulations.   |
| <b>Community:</b>             | Gila River Indian Community  |
| <b>Continuous monitoring:</b> | A method of monitoring air pollutants that is continually measuring the quantity of the pollutant, either gaseous or particulate. Continuous monitors can be used to obtain real-time or short-term averages of pollutants.  |
| <b>Criteria Pollutants:</b>   | Six pollutants (Carbon Monoxide, Lead, Nitrogen Dioxide, Ozone, Particulates, and Sulfur Dioxide) that have NAAQS established by the US EPA.   |
| <b>DEQ:</b>                   | Gila River Indian Community's Department of Environmental Quality  |
| <b>Design Value:</b>          | A design value is a statistic that describes the air quality status of a given area relative to the level of the NAAQS. For a concentration-based standard, the air quality design value is simply the standard-related test statistic. The design value of a pollutant monitoring network is the highest sample value in the network used to compare to the NAAQS; e.g. the 8-hour ozone design value for the network is the monitor with the highest 3-year average of the 4 <sup>th</sup> highest concentrations each year. |
| <b>EPA:</b>                   | U. S. Environmental Protection Agency.   |
| <b>Exceptional Events:</b>    | An uncontrollable event caused by natural sources of pollution or an event that is not expected to recur at a given location. The AQP makes the determination of which events to classify as exceptional and those events are then flagged in the AQS. If the EPA concurs with the AQP's determination, the measured pollution event will not be used in determination of compliance with the NAAQS.   |
| <b>FEM:</b>                   | Federal Equivalency Method. An official method, i.e. equipment   |

and procedure, of monitoring air pollution that has been determined to produce results similar to the Federal Reference Method (FRM).

|   |   |
|---|---|
| <b>Filter-based Monitor:</b>                | A method of monitoring particulate pollution that involves exposing a pre- weighed filter to a specific flow volume of air to capture the particulates in the air. The filters are then post-weighed to determine the weight of particulates per volume, e.g. $\mu\text{g}/\text{m}^3$ . Filter-based monitors used by GRIC are all FRM monitors.   |
| <b>FRM:</b>                                 | Federal Reference Method. An official method (i.e. equipment and procedure) of monitoring air pollution that has been tested and determined to produce results that accurately measure air pollution with acceptable precision. These methods are the baseline that all other methods (i.e., FEMs) refer to.  |
| <b>GRIC:</b>                                | Gila River Indian Community   |
| <b><math>\mu\text{g}/\text{m}^3</math>:</b> | Microgram per cubic meter.  |
| <b>MSA:</b>                                 | Metropolitan Statistical Area. A geographical area designated by the federal government based on the concept of a core area with a large population nucleus, plus adjacent communities having a high degree of economic and social integration with that core. It is unclear in Appendix D 40 CFR 58 how MSAs apply to sovereign tribes. Although the areas within the Community are <i>geographically</i> part of the Phoenix-Mesa-Scottsdale MSA, for purposes of the administration of Section 107 of the Clean Air Act (42 U.S.C. § 7407), except where a specific designation has been otherwise made by the Administrator, the air quality control region for the Community is all land within the exterior boundaries of the Community. Therefore, for the purposes of this document, the MSA principle does not apply to the GRIC Air Monitoring Network. |
| <b>NAAQS:</b>                               | National Ambient Air Quality Standards. A health and welfare-based standard that is set by the US EPA to qualify allowable levels of criteria pollutants.   |
| <b><math>\text{NO}_2</math>:</b>            | Nitrogen dioxide.   |
| <b><math>\text{NO}_x</math>:</b>            | Nitrogen oxides. Sum of nitric oxide (NO), $\text{NO}_2$ , and other nitrogen-containing compounds.   |
| <b>PM:</b>                                  | Particulate matter. Material suspended in the air in the form of minute solid particles or liquid droplets.   |
| <b>PM10:</b>                                | Particulate matter of 10 microns in diameter or smaller.  |
| <b>NPAP-TTP:</b>                            | National Performance Audit Program – Through the Probe  |
| <b>POC:</b>                                 | Parameter Occurrence Code is an identification number distinguishing multiple instruments that may measure the same pollutant.  |
| <b>PPM:</b>                                 | Parts per million.  |

|                            |   |
|----------------------------|---|
| <b>Primary Standard:</b>   | One portion of the NAAQS. These standards are designed to protect the public health.  |
| <b>Secondary Standard:</b> | One portion of the NAAQS. These standards are designed to protect the environment.  |
| <b>SIP:</b>                | State Implementation Plan. SIPs are a collection of state and local regulations and plans to achieve healthy air quality under the Clean Air Act.   |
| <b>SLAMS:</b>              | State and Local Air Monitoring Station. The SLAMS consist of a network of approximately 5,000 monitoring stations nationwide whose size and distribution is largely determined by the needs of State, and local air pollution control agencies to meet their respective SIP requirements. The GRIC monitors operated by the AQP are not part of the SLAMS network, but the AQP operates the monitors in accordance with the requirements for SLAMS. |
| <b>TEOM:</b>               | Tapered Element Oscillating Microbalance. A continuous particulate measuring instrument used by the AQP to measure PM <sub>10</sub> and classified by the US EPA as an FEM.   |
| <b>TIP:</b>                | Tribal Implementation Plan. The TIP is a collection of tribal regulations and plans to achieve healthy air quality under the Clean Air Act. For GRIC, the TIP is incorporated into and synonymous with the Air Quality Management Plan (AQMP).  |
| <b>VOC:</b>                | Volatile organic compounds. VOCs are chemical compounds that can easily vaporize and enter the atmosphere. There are many natural and artificial sources of VOCs; solvents and gasoline make up some of the largest artificial sources. VOCs will react with NO <sub>x</sub> in the presence of sunlight to create ground-level ozone pollution.  |

# 1 INTRODUCTION

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The Code of Federal Regulations (CFR) Title 40 Part 58.10 (40 CFR 58.10) requires an annual monitoring network plan to summarize the air quality surveillance system consisting of State and Local Air Monitoring Stations (SLAMS) and Special Purpose Monitors (SPM) operated under state and local authorities. The annual monitoring network plan must identify the purpose of each monitor and provide evidence that both the siting and the operation of each monitor meet the requirements in 40 CFR Part 58 appendices A, C, D, and E below:

- Appendix A Quality Assurance Requirements for SLAMS, SPMs, and PSD (Prevention of Significant Deterioration) Air Monitoring
- Appendix C Ambient Air Quality Monitoring Methodology
- Appendix D Network Design Criteria for Ambient Air Quality Monitoring
- Appendix E Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring

The Gila River Indian Community (GRIC or Community) Department of Environmental Quality (DEQ) Air Quality Program (AQP) operates air quality monitors that record ambient concentrations of two criteria pollutants - particulate matter less than or equal to 10 microns (PM<sub>10</sub>) and ozone (O<sub>3</sub>). Criteria pollutants are those that the United States Environmental Protection Agency (EPA) has defined as a potential risk to health, and correspondingly defined a National Ambient Air Quality Standard (NAAQS). The NAAQS are intended to protect public health and welfare by setting limits on the allowable level of each pollutant in the ambient air. The other criteria pollutants with established NAAQS that are not monitored by the AQP are particulate matter less than or equal to 2.5 microns (PM<sub>2.5</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), and lead (Pb).

The GRIC air quality monitors are Tribal Monitors and are most closely related to SLAMS monitors. The United States Environmental Protection Agency (EPA) works closely with GRIC to adhere to the requirements for SLAMS networks with appropriate flexibility as stated in the Tribal Authority Rule (TAR).

The purpose of this document is to fulfill the requirements of 40 CFR 58.10, and has been prepared in accordance with *Annual Monitoring Network Plan* checklists and guidance documents provided by USEPA with updates on February 10, 2016. Therefore, this document contains the following sections:

- **Air Monitoring Network Design** – Describes the design requirements for an air monitoring network in accordance with Appendix D of 40 CFR 58.
- **GRIC Air Monitoring Network** – Describes the air monitoring network for the Community including monitor types, background information, summary of 2015 monitoring results, changes to the monitoring network in 2015, and proposed changes to the monitoring network.
- **Compliance Discussion** – Includes a discussion of compliance with 40 CFR 58, including a table of requirements for Network Review, minimum monitoring requirements, precision



and accuracy certifications, data submittals, and audits.

- **Public Notice** – Includes information on public notices and community outreach for review and presentation of this document.
- **Appendices** – Contains the detailed monitoring site information and photographs, and a copy of the presentation that was prepared for the District meetings.

## 2 AIR MONITORING NETWORK DESIGN

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### 2.1 Monitoring Objectives

Appendix D of 40 CFR 58 states that monitoring networks must be designed to meet three basic monitoring objectives:

1. Provide air pollution data to the general public in a timely manner;
2. Support compliance with ambient air quality standards and emissions strategy development; and
3. Support air pollution research studies.

Furthermore, Appendix D states that in order to support air quality management work indicated in the three basic objectives above, monitoring networks must be designed with a variety of the following types of monitoring sites:

- Highest Concentration – Sites to determine the highest concentration expected to occur in the area covered by the network;
- Population Exposure – Sites to determine representative concentrations in areas of high population density;
- Source Impacts – Sites to determine the impact on ambient pollution levels of significant sources or source categories;
- Background Concentrations – Sites to determine general background concentration levels;
- Regional Transport – Sites to determine the extent of regional pollutant transport among populated areas, and in support of secondary standards; and
- Welfare Impacts – Sites to determine the welfare-related impacts in more rural and remote areas (such as visibility impairment and effects on vegetation).

### 2.2 Spatial Scales

The goal in designing a monitoring network is to establish monitoring stations that will provide data to meet the above monitoring objectives. The physical siting of the air monitoring station must achieve a spatial scale of representativeness that is consistent with the monitoring site type, air pollutant to be measured, and the monitoring objective. The spatial scale results from the physical location of the site with respect to the pollutant sources and categories by estimating the size of the area surrounding the monitoring site that experiences uniform pollutant concentrations. The categories of spatial scale are:

- Microscale - An area of uniform pollutant concentrations ranging from several meters up to 100 meters.
- Middle Scale – Uniform pollutant concentrations in an area of about 110 meters to 0.5 kilometer.

- Neighborhood Scale – An area with dimensions in the 0.5 to 4 kilometer range.
- Urban Scale – Citywide pollutant conditions with dimensions of from 4 to 50 kilometers.
- Regional Scale – An entire rural area of the same general geography (that ranges from tens to hundreds of kilometers).

The appropriate spatial scale for each of the monitoring site types is shown in Table 2-1.

**Table 2-1. Relationship Among Monitoring Site Types And Scales Of Representativeness.**

| Monitoring Objective      | Appropriate Spatial Scale |        |              |       |          |
|---------------------------|---------------------------|--------|--------------|-------|----------|
|                           | Micro                     | Middle | Neighborhood | Urban | Regional |
| Highest concentration     | X                         | X      | X            | X     |          |
| Population Exposure       |                           |        | X            | X     |          |
| Source Impacts            | X                         | X      | X            |       |          |
| Background Concentrations |                           |        | X            | X     | X        |
| Regional Transport        |                           |        |              | X     | X        |
| Welfare Impacts           |                           |        |              | X     | X        |

### 3 GILA RIVER INDIAN COMMUNITY AMBIENT AIR MONITORING NETWORK

#### 3.1 General

There are currently three permanent ambient air monitoring stations within the Community – St. Johns, Casa Blanca, and Sacaton (see Figure 1). All three monitoring stations are Tribal Monitors, but follow the requirements of SLAMS networks with appropriate flexibility as stated in the TAR.

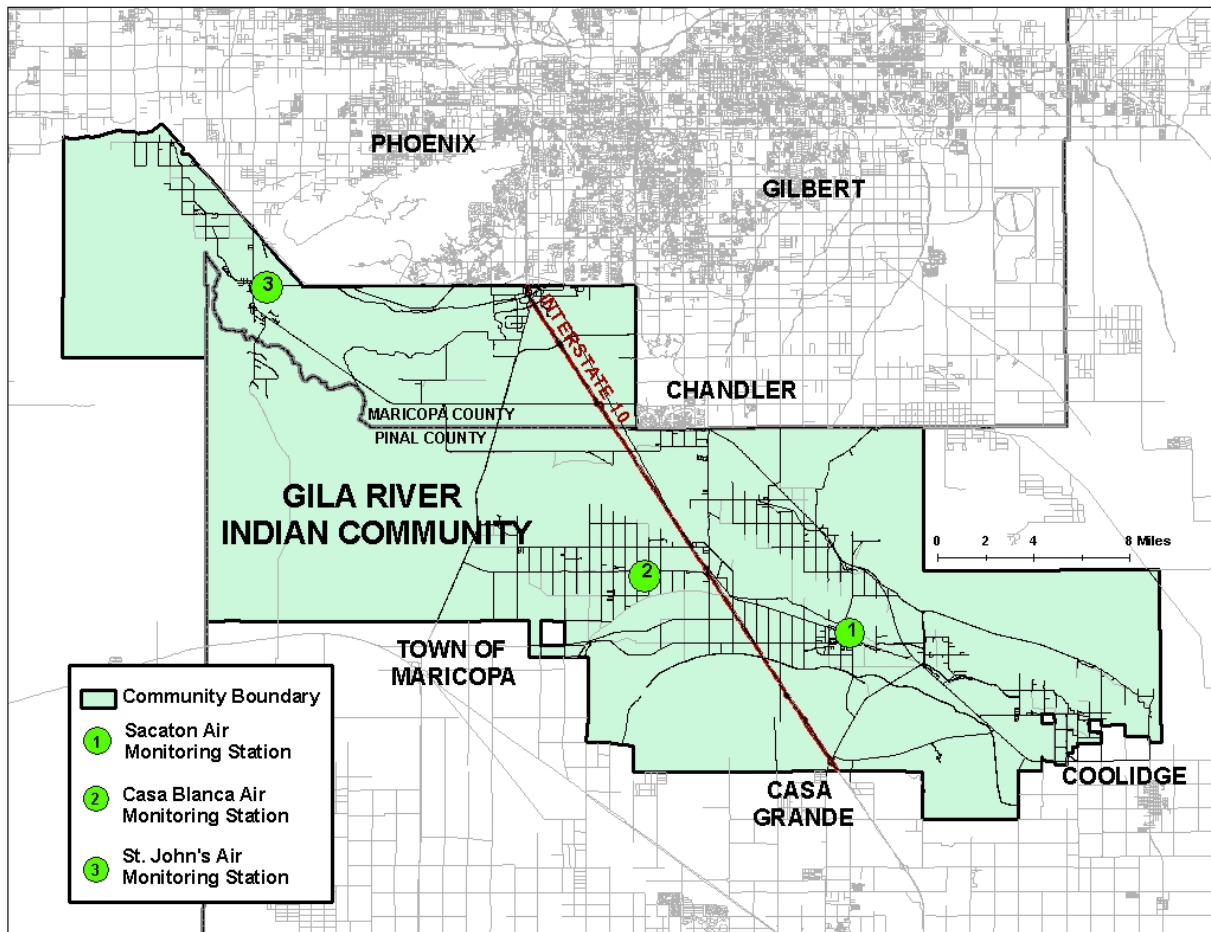


Figure 3-1: Map of Ambient Air Monitoring Stations on Gila River Indian Community

Table 3-1 lists the details regarding each monitoring site's GRIC abbreviation symbol and EPA's AQS identification number. Detailed site information is provided in Appendix A that includes photographs, site type, spatial scale, and population represented. In addition, Appendix B provides detailed monitoring technical specifications.

**Table 3-1. GRIC Ambient Air Monitoring Sites for 2015**

| <b>Name</b> | <b>GRIC<br/>Abbreviation</b> | <b>AQS ID</b>                                |
|-------------|------------------------------|--|
| St. Johns   | SJ                           | 04-013-7003 and TT-614-7003 (Tribal Monitor) |
| Sacaton     | Sac                          | 04-021-7001 and TT-614-7001 (Tribal Monitor) |
| Casa Blanca | CB                           | 04-021-7004 and TT-614-7004 (Tribal Monitor) |

Table 3-2 lists these stations and the pollutants and meteorological parameters that are monitored at each location.

**Table 3-2. Ambient Air Quality Parameters Monitored at Each Station**

| <b>Parameter</b>   | <b>Monitoring Station</b> |                    |                |
|--|---------------------------|--------------------|----------------|
|  | <b>St. Johns</b>          | <b>Casa Blanca</b> | <b>Sacaton</b> |
| Ozone  | X                         |                    | X              |
| PM <sub>10</sub> (TEOM)  | X                         | X                  | X              |
| Wind Speed   | X                         | X                  | X              |
| Wind Direction   | X                         | X                  | X              |
| Ambient Temperature  | X                         | X                  | X              |
| Ambient Barometric Pressure  | X                         | X                  | X              |
| Precipitation  | X                         | X                  | X              |
| Relative Humidity  | X                         | X                  | X              |
| Camera (Visibility)  |                           | X                  | X              |
| Table Notes:<br>PM <sub>10</sub> - Particulate Matter ≤ 10 microns<br>TEOM - Tapered Elemental Oscillating Microbalance. Continuous measuring monitor (1 hr averages). |                           |                    |                |

Table 3-3 shows the National Ambient Air Quality Standards (NAAQS) for pollutants that are currently monitored by GRIC, including ozone and particulate matter equal to and less than 10 microns (PM<sub>10</sub>). Additional pollutants for which EPA has established NAAQS and that are not currently monitored by GRIC include sulfur dioxide, nitrogen dioxide, carbon monoxide, PM<sub>2.5</sub>, and lead. EPA periodically reviews and revises these standards based on new public health and scientific information. These revisions often require changes to air monitoring networks and methodologies.

**Table 3-3. National Ambient Air Quality Standards Monitored for Pollutants by GRIC**

| Pollutant | Primary/<br>Secondary    | Averaging<br>Time | Level                 | Form   |
|-----------|--------------------------|-------------------|-----------------------|--|
| Ozone     | primary and<br>secondary | 8-hour            | 0.075 PPM *           | Annual fourth-highest daily maximum 8-hr<br>concentration, averaged over 3 years |
|           |                          |                   | 0.070 PPM #           | Annual fourth-highest daily maximum 8-hr<br>concentration, averaged over 3 years |
| PM10      | primary and<br>secondary | 24-hour           | 150 µg/m <sup>3</sup> | Not to be exceeded more than once per year on<br>average over 3 years            |

\* March 12, 2008, the EPA lowered the eight-hour ozone NAAQS from 0.080 to 0.075 PPM.

# October 1, 2015, the EPA promulgated revised primary and secondary eight-hour ozone NAAQS from 0.075 to 0.070 PPM.

The site types represented by each air quality monitor are shown in Table 3-4.

**Table 3-4. Site Types for Each Monitoring Station**

| Site Type                 | Ozone     |         | Particulate Matter ≤10 Microns (PM10) |             |         |
|---------------------------|-----------|---------|---------------------------------------|-------------|---------|
|                           | St. Johns | Sacaton | St. Johns                             | Casa Blanca | Sacaton |
| Highest Concentration     | X         |         |                                       | X           |         |
| Population Exposure       | X         | X       | X                                     | X           | X       |
| Source Impacts            |           |         |                                       | X           |         |
| Background Concentrations | X         | X       | X                                     | X           | X       |
| Regional Transport        | X         | X       | X                                     | X           | X       |
| Welfare Impacts           |           |         |                                       |             |         |

Detailed site information for each of the monitoring locations is presented in Appendix A.

## 3.2 Ozone Monitoring Network

Beginning in 2002, the Community started monitoring for ozone at two locations - one in Sacaton (District 3) and one in St Johns (District 6). In 2015, both ozone monitors were reported as operational in AQS. In 2015, the GRIC ozone monitors were only operational during ozone season (April to October).

GRIC started monitoring ozone, at both GRIC sites, on an annual schedule beginning January 1, 2016. GRIC will monitor on an annual schedule throughout 2016 and a data review will be performed in December 2016 for seasonal monitoring reconsideration.

### 3.2.1 Background

The following subsections provide background information on the two ozone monitoring

locations. Additional detailed information for each monitor is provided in Appendix B.

### **3.2.1.1 Sacaton**

Operated by the AQP since 2002, this site provides background and regional transport ozone monitoring on a regional scale. This site is located near the central GRIC government and business district of Sacaton, which includes four schools and a community hospital. It also provides a measurement of representative area ozone concentration for the community of Sacaton and surrounding areas. The monitor generally measures background levels of ozone during prevailing West or East winds. However, under the right wind conditions, the monitor can also detect ozone and ozone precursor transport from the Phoenix Metropolitan Area (PMA), north of the Community, in the form of elevated ozone readings. Measured concentrations at this site are often similar to those recorded at Pinal County's Casa Grande monitor (approximately 9 miles south of Sacaton).

### **3.2.1.2 St Johns**

Initially operated by the AQP at Vee Quiva Casino (AQS ID 7002) in 2002 and then relocated 2 miles south to Gila Crossing Middle School (AQS ID 7003) in September 2004. This site is located in District 6 on the southwest side of the South Mountain Range near the City of Phoenix and provides background and regional transport ozone monitoring on a regional scale. Ozone concentrations at this site exhibit strong diurnal fluctuations caused by oxides of nitrogen (NO<sub>x</sub>) from nearby neighboring jurisdictions in the City of Phoenix. The monitor generally measures background levels of ozone during prevailing West or East winds. However, under the right wind conditions, the monitor can also detect ozone and ozone precursor transport from the PMA, north and east of the monitor location, in the form of elevated ozone readings.

## **3.2.2 2015 Monitoring Results Summary**

The 1-hour average ozone standard was revoked by the EPA on June 15, 2005, and has been replaced by the 8-hour average standard for compliance purposes. On March 12, 2008, the EPA lowered the eight-hour ozone NAAQS from 0.080 to 0.075 ppm. Compliance with the standard is determined by averaging the 4<sup>th</sup> highest eight-hour average over a three-year period. This three-year average must be less than or equal to 0.075 ppm.

There were no exceedances, at each GRIC site, of the 8-hour primary standard (NAAQS) ozone in 2015. Table 3-5 presents the four highest 8-hour average ozone readings for each monitor during the 2015 monitoring season (April – October).

**Table 3-5. 2015\* 8-Hour Average Ozone Summary**

| Site  | Max (PPM)<br>Date  | 2nd High<br>(PPM)<br>Date | 3rd High<br>(PPM)<br>Date | 4th High<br>(PPM)<br>Date | Number of<br>Days >0.075 |
|---|--------------------|---------------------------|---------------------------|---------------------------|--------------------------|
| St Johns  | 0.072<br>5/11/2015 | 0.069<br>5/1/2015         | 0.068<br>4/19/2015        | 0.067<br>4/18/2015        | 0                        |
| Sacaton   | 0.067<br>8/1/2015  | 0.066<br>5/11/2015        | 0.065<br>5/1/2015         | 0.064<br>4/19/2015        | 0                        |
| Table Notes:<br>* - Ozone monitors only operated during ozone season (April through October) in 2015. |                    |                           |                           |                           |                          |

In 2015, there were no violations of the 8-hour average NAAQS for ozone (the 8-hour average NAAQS for ozone is violated when the three-year average of the fourth highest values for each year is greater than 0.075 ppm). The fourth highest 8-hour average ozone reading for each of the past three years and the 3-year average is shown in Table 3-6.

**Table 3-6. Three-Year\* Average of 8-Hour Ozone**

| Site  | 2013 4 <sup>th</sup> High<br>(PPM) | 2014 4 <sup>th</sup> High<br>(PPM) | 2015 4 <sup>th</sup> High<br>(PPM) | 3-Year Average of<br>4 <sup>th</sup> High (PPM) |
|---|------------------------------------|------------------------------------|------------------------------------|---|
| St Johns  | 0.068                              | 0.069                              | 0.067                              | 0.068   |
| Sacaton   | 0.065                              | 0.066                              | 0.064                              | 0.065   |
| Table Notes:<br>* - Ozone monitors only operate during ozone season (April through October) |                                    |                                    |                                    |   |

### 3.3 PM<sub>10</sub> Particulate Monitoring Network

Beginning in 2002, the Community started monitoring for PM<sub>10</sub> at one location (Casa Blanca) using a Federal Reference Method (FRM), filter-based, monitor operating on a 1-in-3 day schedule. In 2013, the Community began continuous monitoring for PM<sub>10</sub> at all three monitoring stations (St. Johns, Casa Blanca, and Sacaton) using Federal Equivalent Method (FEM) Tapered Element Oscillating Microbalance (TEOM) monitors that provide hourly PM<sub>10</sub> averages. In 2015, all three TEOM FEM monitors were reported as operational in AQS. There are no collocation requirements for EPA-approved PM<sub>10</sub> FEM monitors.

#### 3.3.1 Background

The following subsections provide background information on the three PM<sub>10</sub> monitoring locations. Additional detailed information for each monitor is provided in Appendix B.

##### 3.3.1.1 Casa Blanca

This site has been operated by the AQP since 2002. This monitoring site is a neighborhood scale and representative of particulate concentrations in District 5, Casa Blanca. The site consists of one TEOM monitor. Since there are no collocation requirements for EPA-approved PM<sub>10</sub> FEM



monitors, the two collocated FRM samplers (two identical monitors that sample separately) were discontinued on December 31, 2014. Appendix D provides documentation for the approval of discontinuing the filter-based PM<sub>10</sub> FRM samplers.

This monitoring site was originally placed in one of the three most populated areas of the Community to measure source impacts from agricultural areas. Although located in a neighborhood of agricultural operations, it can be representative of other areas beyond the local jurisdictions. This monitoring station is located approximately 4 to 5 miles northeast of other PM<sub>10</sub> sources (e.g., agricultural areas and dairy operations) that are outside of the Community's boundaries and control, and may be influenced by PM<sub>10</sub> generated from those sources.

### 3.3.1.2 *Sacaton and St Johns*

These two sites started reporting PM<sub>10</sub> data to the AQS database beginning January 1, 2013. Both sites are currently set up to monitor PM<sub>10</sub> concentrations using continuous TEOM monitors. These two sites have been approved for monitoring and reporting as established within the GRIC Quality Assurance Project Plan (QAPP).

## 3.3.2 2015 Monitoring Results Summary

The 24-hour Primary standard for PM<sub>10</sub> is 150 µg/m<sup>3</sup> (155 µg/m<sup>3</sup> with mathematical rounding). This standard is violated when the expected number of exceedances at a monitor is more than one per year on average over three years. A formula, as detailed in 40 CFR 50, is used to determine the expected number of exceedances. The formula takes into account the number of days sampling occurred and the number of valid samples collected. A 3-year average of these estimated days is then used to determine compliance.

In 2015, there were 5 exceedances of the 24-hour primary standard (NAAQS) for PM<sub>10</sub> from a combination of the three (3) PM<sub>10</sub> monitors, and GRIC violated the PM<sub>10</sub> NAAQS on four (4) days in 2015 (some exceedances at different monitors occurred on the same day). However, GRIC has flagged all 5 of the exceedances as *exceptional events* (see Definitions of Terms). In accordance with the EPA's exceptional events policy, once approved these data are not used in determining compliance with the NAAQS. Table 3-7 presents the summary of the 24-hour average PM<sub>10</sub> readings for each monitor in 2015.

Exceedances of the 24-hour PM<sub>10</sub> NAAQS at the GRIC monitors also occurred in 2013 and 2014 and were flagged as Exceptional Events by GRIC. The EPA has not issued an official concurrence with the 2013 and 2014 data. Therefore, a determination of compliance with the 24-hour PM<sub>10</sub> NAAQS cannot be made at this time.

**Table 3-7. 2015 24-Hour Average PM10 Summary**

| Site Name<br>(Monitor Type)                             | 24-hr<br>Average<br>Max<br>( $\mu\text{g}/\text{m}^3$ ) | 24-hr<br>Average<br>2nd High<br>( $\mu\text{g}/\text{m}^3$ ) | Number of<br>24-hr<br>NAAQS<br>Exceedances | Estimated<br>Exceedances<br>(Including data<br>flagged as<br>Exceptional<br>Events) | Annual<br>Average<br>( $\mu\text{g}/\text{m}^3$ ) | No. of<br>Exceptional<br>Events | No. of<br>valid days<br>/ days<br>possible |
|---|---|--|--|---|---|---------------------------------|--|
| St Johns<br>(TEOM)                                      | 203*<br>8/29/2015                                       | 200*<br>8/11/2015  | 2*   | 2   | 26.7  | 2                               | 363 / 365                                  |
| Sacaton<br>(TEOM)                                       | 145<br>8/29/2015  | 136<br>6/27/2015   | 0  | 0   | 30.6  | 0                               | 362 / 365                                  |
| Casa Blanca<br>(TEOM-POC3)                              | 191*<br>8/29/2015                                       | 172*<br>6/27/2015  | 3*   | 3.0034  | 40.6  | 3                               | 362 / 365                                  |
| * Data has been flagged by GRIC as an Exceptional Event |   |  |  |   |   |                                 |  |

### 3.4 Meteorological Network

GRIC DEQ collects meteorological data at all three air monitoring sites to support the analysis of ambient air quality data and to provide support for exceptional event reporting.

### 3.5 Changes to the Network in 2015

The following changes were made to the monitoring network in 2015:

- The Sacaton Site (TT-614-7001) relocation request was submitted to Region 9 Air Quality Analysis Office on January 27, 2015. GRIC received approval on this request from EPA Region 9 within the 2014 Annual Network Plan review letter, dated 11/3/2015. (See Appendix E of this document for documentation submitted from EPA, Region 9 Office.) Following this approval, GRIC installed a complete monitoring operation at the new location with the exact same monitor types as of the old site. The new and old monitoring sites collected the exact same information using similar equipment, PM<sub>10</sub> (TEOM 1405) and ozone (400T) for three months.

GRIC started reporting data to AQS from the new location on April 1, 2016 for both criteria pollutants (44201 and 81102).

EPA Region 9 office reviewed and approved that the new site will retain all site and monitor codes from the old site for reporting to AQS; 04-021-7001 and TT-614-7001 (Tribal Monitor ID).

- There were no changes made to the GRIC PM<sub>10</sub> Monitoring Network in 2015.
- There were no changes made to the GRIC Ozone Monitoring Network in 2015.

### **3.6 Proposed Network Changes and Improvements**

The only major change made to the GRIC Air Monitoring Network was the change from a seasonal ozone monitoring schedule (April – October) to an annual schedule (January – December). GRIC started annual monitoring schedule for ozone on January 1, 2016. Otherwise, there are currently no proposed changes for the next 6 months (July 2016 – December 2016).

## 4 COMPLIANCE DISCUSSION

In accordance with 40 CFR 58.10(a)(1), the following sections provide information on compliance with the requirements of Appendices A, C, D, and E of 40 CFR 58. A cross-reference of the requirements of Appendices A, C, D, and E of 40 CFR 58 and the section(s) of this report that address those requirements is included in tables provided in Appendix B for all three GRIC air monitoring sites.

### 4.1 Minimum Monitoring Requirements

Tables D-2 and D-4 in Appendix D of 40 CFR Part 58 define minimum monitoring requirements for ozone and PM10, respectively. Tables D-2 and D-4 are reproduced as Tables 4-1 and 4-2, respectively, below. The minimum monitoring requirements are based on the population of the Metropolitan Statistical Area (MSA) and the design value for each NAAQS.

**Table 4-1. Ozone Monitoring Requirements for SLAMS (Number of Stations per MSA)**

| MSA Population     | Most recent 3-year design value<br>≥85% NAAQS (≥ 0.0638) | Most recent 3-year design value<br><85% NAAQS (< 0.0638) |
|--------------------|--|--|
| >10 million        | 4  | 2  |
| 4-10 million       | 3  | 1  |
| 350,000-<4 million | 2  | 1  |
| 50,000-<350,000    | 1  | 0  |

**Table 4-2. PM10 Monitoring Requirements for SLAMS (Number of Stations per MSA)**

| MSA Population    | High concentration<br>Exceeds NAAQS by 20% or more<br>(>180 µg/m <sup>3</sup> ) | Medium concentration<br>>80% of NAAQS<br>(>120 µg/m <sup>3</sup> ) | Low concentration<br>< 80% of NAAQS<br>(<120 µg/m <sup>3</sup> ) |
|-------------------|---|--|--|
| >1,000,000        | 6-10  | 4-8  | 2-4  |
| 500,000-1,000,000 | 4-8   | 2-4  | 1-2  |
| 250,000-500,000   | 3-4   | 1-2  | 0-1  |
| 100,000-250,000   | 1-2   | 0-1  | 0  |

It is unclear in Appendix D 40 CFR 58 how MSAs and the minimum monitoring requirements in Tables D-2 and D-4 (Tables 4-1 and 4-2) apply to sovereign tribes. Although the areas within the Community are *geographically* part of the Phoenix-Mesa-Scottsdale MSA, for purposes of the administration of Section 107 of the Clean Air Act (42 U.S.C. § 7407), except where a specific designation has been otherwise made by the Administrator, the air quality control region for the Community is all land within the exterior boundaries of the Community. Because the calculations of the numbers of monitors required are based on MSAs, and the GRIC is its own sovereign agency with a distinct and separate population, the monitoring requirements based on populations within an MSA are not applicable. The values shown in Tables 4-1 and 4-2 are shown for informational purposes only.

The design value is a calculated value based upon the set of the highest recorded concentrations over three years at a site in the attainment or nonattainment area. The process for computing the design value for each criteria pollutant is described in the appendices of 40 CFR Part 50. For the purpose of this document, the design values listed are the highest calculated concentrations recorded in the Community. As shown in Table 4-3, the design value for ozone, representing that concentration that is used to compare against the standard, is 0.068 and 0.065 PPM at St. Johns and Sacaton.

The minimum monitoring requirements of 40 CFR 58 Appendix D for the ozone and PM10 monitors within the Community are presented in Tables 4-3 and 4-4, respectively. The GRIC Air Quality Management Plan (AQMP) does not require a minimum number of monitors for the Community.

**Table 4-3. Minimum Monitoring Requirements for GRIC Ozone Monitors, 2013-2015**

| MSA  | Monitor Site:<br>County | Population<br>(GRIC<br>Census 2013) | 8-hour Design<br>Value for<br>2013-2015<br>(ppm) | Site<br>(AQS ID)           | Minimum<br>Monitors<br>Required | Number<br>of Active<br>Monitors | Monitors<br>Needed |
|--|-------------------------|-------------------------------------|--|----------------------------|---------------------------------|---------------------------------|--------------------|
| NA <sup>1</sup>  | St. Johns: Maricopa     | 21,277                              | 0.068  | St. Johns<br>(TT-614-7003) | 0 <sup>A</sup>                  | 2                               | 0                  |
|  | Sacaton: Pinal          |                                     | 0.065  | Sacaton<br>(TT-614-7001)   |                                 |                                 |                    |
| Table Notes:   |                         |                                     |  |                            |                                 |                                 |                    |
| 1. It is unclear in Appendix D 40 CFR 58 how MSAs apply to Tribal agencies. Although the areas within the Community are <i>geographically</i> part of the Phoenix-Mesa-Scottsdale MSA, for purposes of the administration of Section 107 of the Clean Air Act (42 U.S.C. § 7407), the air quality control region for the Community is all land within the exterior boundaries of the Community. Therefore, for the purposes of this document, the MSA is not applicable to GRIC.                               |                         |                                     |  |                            |                                 |                                 |                    |
| A. A 3-year design value greater than 0.0638 would require one monitor for a population between 50,000 and 350,000 (smallest population group in Table 4-2). Since the GRIC population is below the lowest population range in Table 4-2 and Tribal requirements are unclear, the minimum monitoring requirements was assumed to be zero. For comparison, the population of the Phoenix-Mesa-Scottsdale MSA in 2010 was 4,192,887 (according to the 2010 census), which would require a minimum of 3 monitors. |                         |                                     |  |                            |                                 |                                 |                    |

**Table 4-4. Minimum Monitoring Requirements for GRIC PM10 Monitors, 2013-2015**

| MSA             | Monitor Site:<br>County | Population<br>(GRIC Census<br>2013) | Max<br>Concentration<br>(µg/m <sup>3</sup> ) | Site<br>(AQS ID)                                      | Minimum<br>Monitors<br>Required | Number of<br>Active<br>Monitors | Monitors<br>Needed |
|-----------------|-------------------------|-------------------------------------|--|---|---------------------------------|---------------------------------|--------------------|
| NA <sup>1</sup> | St. Johns:<br>Maricopa  | 21,277                              | 329 <sup>A</sup><br><br>154 <sup>B</sup>     | St Johns<br>(04-013-7003 and TT-<br>614-7003 POC1)    | 0 <sup>C</sup>                  | 3                               | 0                  |
|                 | Sacaton: Pinal          |                                     |  | Sacaton<br>(TT-614-7001 and TT-<br>614-7001 POC1)     |                                 |                                 |                    |
|                 | Casa Blanca:<br>Pinal   |                                     |  | Casa Blanca<br>(TT-614-7004 and TT-<br>614-7004 POC3) |                                 |                                 |                    |

|  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|
| Table Notes:   |  |  |  |  |  |  |  |
| 1. It is unclear in Appendix D 40 CFR 58 how MSAs apply to Tribal agencies. Although the areas within the Community are <i>geographically</i> part of the Phoenix-Mesa-Scottsdale MSA, for purposes of the administration of Section 107 of the Clean Air Act (42 U.S.C. § 7407), the air quality control region for the Community is all land within the exterior boundaries of the Community. Therefore, for the purposes of this document, the MSA is not applicable to GRIC. |  |  |  |  |  |  |  |
| A. Max concentration including data flagged as exceptional events. CB site, 4/8/2013.  |  |  |  |  |  |  |  |

- |  |
|--|
| <p>B. Max concentration <u>excluding</u> data flagged as exceptional events. Sac site, 7/3/2014.</p> <p>C. A maximum concentration greater than <math>180 \mu\text{g}/\text{m}^3</math> would require 1-2 monitors for a population between 100,000 and 250,000 (smallest population group in Table 4-3). A maximum concentration between 120 and <math>180 \mu\text{g}/\text{m}^3</math> would require 0-1 monitors for a population between 100,000 and 250,000. Since the GRIC population is below the lowest population range in Table 4-3 and Tribal requirements are unclear, the minimum monitoring requirements was assumed to be zero. For comparison, the population of the Phoenix-Mesa-Scottsdale MSA in 2010 was 4,192,887 (according to the 2010 census), which would require a minimum of 6-10 monitors for maximum concentrations <math>&gt;180 \mu\text{g}/\text{m}^3</math> and 4-8 monitors for maximum concentrations between 120 and <math>180 \mu\text{g}/\text{m}^3</math>.</p> |
|--|

Based on the information contained in Tables 4-3 and 4-4, the GRIC monitoring network meets the minimum monitoring requirements for all criteria pollutants measured (i.e., ozone and PM<sub>10</sub>) as established in 40 CFR 58 Appendix D, Tables D-2 and D-4.

Of equal or more importance is whether the monitoring meets the mission of the AQP to protect and inform the GRIC members. The three monitoring sites are located in areas designed to measure the air that most people in the Community breathe, as well as assess possible transport from neighboring lands. The current sites and the parameters they measure are meeting the objectives of the AQP.

## 4.2 Data Submission Requirements

Federal regulations (Appendix A of 40 CFR 58 and 40 CFR 58.15) require air monitoring organizations to submit precision and accuracy data for the data reported to the federal database. The air monitoring precision and accuracy data for the GRIC monitors are submitted to the USEPA AIRS/AQS database on a quarterly basis and are up to date as of the publication of this report.

Federal regulations (40 CFR 58.15) also require the air monitoring organization to annually submit a letter certifying that data has been submitted for that year to the EPA AQS database and that the data accurately represents the air quality in the Community. The AQP certified and submitted the 2015 ozone and PM<sub>10</sub> data for the Community to USEPA Region 9 Administrator on April 21, 2016 via Email.

## 4.3 Air Quality Data

All of the GRIC ambient air monitoring stations are registered with the EPA and regularly report NAAQS criteria pollutant data to the EPA's Air Quality Systems (AQS) database. The data generated at these stations are public information and are available in various formats from the respective agencies. Table 4-5 below lists some popular sources for air quality data.

**Table 4-5. Sources of Ambient Air Quality Data**

| Agency  | Address For Data Requests   | Email / Internet address   | Data Available                                    |
|---|---|--|---|
| GRIC DEQ AQP                                  | P.O. Box 97<br>Sacaton, AZ<br>85147<br>attn: Ondrea Barber, Director          | <a href="mailto:Ondrea.Barber@gric.nsn.us">Ondrea.Barber@gric.nsn.us</a>   | GRIC Air Monitoring Data                          |
| United States Environmental Protection Agency | Ariel Rios Building<br>1200 Pennsylvania Avenue, N.W.<br>Washington, DC 20460 | <a href="http://www.epa.gov">www.epa.gov</a><br><a href="http://www.epa.gov/ttn/airs/airsaqs/index">www.epa.gov/ttn/airs/airsaqs/index</a> | National Air Monitoring Data, including GRIC data |

## 4.4 Audits

The AQP performed audits of the monitoring equipment in 2015. The performance audit dates for the ozone monitors are shown in Table 4-6 and the semi-annual audits dates for the continuous TEOM PM10 monitors are shown in Table 4-7. In addition, this information is included in Appendix B, along with detailed information of air monitoring specifications.

**Table 4-6. Performance Audit Dates for GRIC Ozone Monitors**

| Site     | AQS ID                                       | Parameter | 2015 Audit Dates <sup>1</sup>    |
|----------|--|-----------|----------------------------------|
| Sacaton  | 04-021-7001 and TT-614-7001 (Tribal Monitor) | Ozone     | 5/7, 6/19, 7/23, 9/10, and 11/03 |
| St Johns | 04-013-7003 and TT-614-7003 (Tribal Monitor) | Ozone     | 5/8, 6/19, 7/22, 9/10, and 11/04 |

Table Notes:  
1. Ozone monitors were only operated during ozone season (April through October) in 2015.

**Table 4-7. Semi-Annual Flow Rate Audit Dates for GRIC Continuous TEOM PM10 Monitor**

| Site               | AQS ID  | Parameter | 2015 Audit Dates                       |
|--------------------|---|-----------|--|
| Sacaton (TEOM)     | 04-021-7001 and TT-614-7001 (Tribal Monitor)      | PM10      | 3/12, 5/7, 6/19, 7/23, 9/10, and 11/05 |
| St Johns (TEOM)    | 04-013-7003 and TT-614-7003 (Tribal Monitor)      | PM10      | 3/17, 5/8, 6/19, 7/22, 9/10, and 11/05 |
| Casa Blanca (TEOM) | 04-021-7004 and TT-614-7004 POC3 (Tribal Monitor) | PM10      | 3/12, 5/7, 7/21, 9/10, and 11/05       |

## 5 PUBLIC NOTICE

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In accordance with 40 CFR 58.10, the annual monitoring network plan must be made available for public inspection (website, hardcopy posting in libraries and public offices, and/or newspaper listing) for at least 30 days prior to submission to EPA. If an opportunity for public comment had been provided, comments received must be included in the annual network plan submission.

The Gila River Indian Community DEQ made a draft copy of this Network Review available to the public on April 15, 2016. In an effort to notify the public of the Network Review, the AQP published information through the following outlets:

- Public Notice posted in the Gila River Indian Newspaper, a newspaper of general circulation in Gila River Indian Community.
- Public Notice posted on the GRIC DEQ website ([www.gricdeq.org/public\\_notices.html](http://www.gricdeq.org/public_notices.html)).
- Presentations at Community District Meetings.

### 5.1 News Release

The following news release was advertised in the Gila River Indian Newspaper, VOL. 19, No. 8 Edition (dated April 15, 2016):

#### **PUBLIC NOTICE OF AMBIENT AIR MONITORING NETWORK REVIEW**

*Pursuant to 40 Code of Federal Regulations (CFR) §58.10 Gila River Indian Community (GRIC) Department of Environmental Quality (DEQ) Air Quality Program (AQP) will make its annual monitoring network plan available for public inspection prior to submission to the United States Environmental Protection Agency. The Annual Ambient Monitoring Network Review and Data Summary present changes to and data collected from the air quality monitoring network during calendar year 2015. This document will also be available for review at the GRIC DEQ office located at 35 Pima Street, Sacaton, AZ 85147, and on the AQP website at <http://www.gricdeq.org/documents.html>. Additionally, presentations will be provided at all GRIC district monthly meetings from April thru June 2016.*

*Public comments may be submitted in writing to GRIC DEQ Air Quality, P.O. Box 97, Sacaton, Arizona, 85147, or comments may be given orally at the scheduled community meetings. Additional information is available from GRIC DEQ Air Quality, 35 Pima Street, Sacaton, Arizona, the AQP website [http://www.gricdeq.org/air\\_quality\\_program\\_html](http://www.gricdeq.org/air_quality_program_html), or by calling 520-562-2234.*

There were no requests made to review the document.

### 5.2 District Meeting Presentations

The AQP also presented a summary of the content of this document during one of the monthly meetings for each of the seven GRIC Districts. A copy of the presentation slides is included as



Appendix C. The district presentation dates along with some of the comments and questions received from the Community members at the District meetings is included in Table 5-1 below.

**Table 5-1. Summary of Comments and Questions Received at District Meetings in 2016**

| <b>District</b> | <b>Meeting Date</b> | <b>Comments / Questions Received</b>   |
|-----------------|---------------------|--|
| 1               | 04/18/2016          | <ul style="list-style-type: none"> <li>• "Why doesn't District 1 have a monitoring station?" Comment regarding a new Sand and Gravel location being built in District 1 and question about how that would affect the air quality.</li> </ul>   |
| 2               | 05/02/2016          | <ul style="list-style-type: none"> <li>• Are the PM10 data with high measurements occur during high wind events?</li> <li>• How much of Phoenix air affects the Community ozone data?</li> <li>• What are you planning to do with this information?</li> <li>• How much has the Community put into programs for education on the flag program at schools?</li> <li>• If PM10 is man-made, what do you do with it?</li> <li>• Flag programs – what schools are they located at?</li> </ul>  |
| 3               | 04/19/2016          | <ul style="list-style-type: none"> <li>• Where are the 3 monitoring stations located?</li> <li>• Is it possible to have a digital message board? Can DEQ provide one?</li> <li>• Consider social media as an outreach opportunity <ul style="list-style-type: none"> <li>○ Employees have Internet</li> <li>○ Community members need avenues to access info</li> </ul> </li> <li>• Could the Flag Program be presented to Elder meetings?</li> <li>• Could the Flag Program be rolled out to the District Centers?</li> </ul>  |
| 4               | 05/31/2106          | <ul style="list-style-type: none"> <li>• How are High Pollution Advisories communicated?</li> <li>• Is DEQ planning additional monitoring for the Loop 202 South Mountain Freeway?</li> <li>• How is the air monitoring funded?</li> <li>• Where are the monitors located?</li> <li>• Do we have a permit to conduct monitoring?</li> <li>• Does the Community (DEQ) do its own air quality forecasting?</li> <li>• Would District 4 be a good place for a monitor because there is a lot of farming and dirt roads in the district?</li> <li>• Is climate change affecting our results? Are we seeing the affects of climate change?</li> </ul> |
| 5               | 05/31/2016          | <ul style="list-style-type: none"> <li>• No questions</li> </ul>   |
| 6               | 06/13/2016          | <ul style="list-style-type: none"> <li>• Has there ever been a purple day? (question on air quality index)</li> <li>• Are there any plans for monitoring for the proposed freeway?</li> </ul>  |
| 7               | 07/18/2016          | <ul style="list-style-type: none"> <li>• No questions</li> </ul>   |

# Appendix A

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## **2015 AIR MONITORING DATA BY SITE**

(Site information includes: photographs, site type and spatial scale, and population represented.)

- St. Johns
- Casa Blanca
- Sacaton

## St Johns (SJ), 04-013-7003/TT-614-7003 (Tribal Monitor)



**Location:** 4208 W. Pecos Rd  
Laveen, AZ 85339

**Spatial Scale:** Urban (O<sub>3</sub>) and  
Neighborhood (PM<sub>10</sub>)

**Monitoring Type:** Population  
Exposure



**Site Description:** This site has been operational since 2003. The spatial scale for the St Johns site is Neighborhood for PM<sub>10</sub> and Urban Scale for Ozone. It is located in a residential area and on a community elementary school property. This Tribal Monitoring location monitors for Ozone and PM<sub>10</sub>. This site operates one gaseous ozone analyzer and one continuous PM<sub>10</sub> monitor that are both FEM instruments. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, wind speed/direction, relative humidity, and precipitation. In addition, this site is planned for installation of two digital cameras.

|                  |  | 2013  | 2014  | 2015  |
|------------------|--|-------|-------|-------|
| O <sub>3</sub>   | Max. 8-hr O <sub>3</sub> Ave. (PPM)                        | 0.075 | 0.076 | 0.072 |
|                  | O <sub>3</sub> # Daily Exceedances > 0.075 PPM             | 1     | 1     | 0     |
|                  | O <sub>3</sub> 3-year Ave of 4 <sup>th</sup> Highest (PPM) | 0.070 | 0.069 | 0.068 |
| PM <sub>10</sub> | Max. 24-hr PM <sub>10</sub> Ave. (µg/m <sup>3</sup> )      | 257*  | 160*  | 203*  |
|                  | Number of exceedances 24-hr PM <sub>10</sub>               | 4†    | 1†    | 2†    |
|                  | Annual PM <sub>10</sub> Ave (µg/m <sup>3</sup> )           | 28.7  | 32.0  | 26.7  |

\* Indicates an exceedance of the NAAQS

† Indicates exceptional events concurrence requested at this site and no Regional EPA assessment to date.

## Sacaton (Sac), 04-021-7001/TT-614-7001 (Tribal Monitor)



**Location:** 45 S. Church Street,  
Sacaton, AZ 85147

**Spatial Scale:** Urban (O<sub>3</sub>) and  
Neighborhood (PM<sub>10</sub>)

**Monitoring Type:** Population  
Exposure

**Site Description:** This site has been operational since 2002. The spatial scale for the Sacaton site is Neighborhood for PM<sub>10</sub> and Urban Scale for Ozone. It is located in a community residential area. This Tribal Monitoring location monitors for Ozone and PM<sub>10</sub>. This site operates one gaseous ozone analyzer and one continuous PM<sub>10</sub> monitor that are both FEM instruments. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, wind speed/direction, relative humidity, and precipitation. In addition, this site operates a video camera system.



|                  |  | 2013  | 2014  | 2015  |
|------------------|--|-------|-------|-------|
| O <sub>3</sub>   | Max. 8-hr O <sub>3</sub> Ave. (PPM)                        | 0.076 | 0.076 | 0.067 |
|                  | O <sub>3</sub> # Daily Exceedances > 0.075 PPM             | 1     | 1     | 0     |
|                  | O <sub>3</sub> 3-year Ave of 4 <sup>th</sup> Highest (PPM) | 0.070 | 0.067 | 0.065 |
| PM <sub>10</sub> | Max. 24-hr PM <sub>10</sub> Ave. (µg/m <sup>3</sup> )      | 315*  | 197*  | 145   |
|                  | Number of exceedances 24-hr PM <sub>10</sub>               | 5†    | 3†    | 0     |
|                  | Annual PM <sub>10</sub> Ave (µg/m <sup>3</sup> )           | 38.6  | 42.6  | 30.6  |

\* Indicates an exceedance of the NAAQS

† Indicates exceptional events concurrence requested at this site and no Regional EPA assessment to date.



## Casa Blanca (CB), 04-021-7004/TT-614-7004 (Tribal Monitor)



**Location:** 3455 W. Casa Blanca Road  
Bapchule, AZ 85121

**Spatial Scale:** Neighborhood

**Monitoring Type:** Population Exposure, Highest concentration (PM<sub>10</sub>)



**Site Description:** This site has been operational since 2002. The spatial scale for the Casa Blanca site is Neighborhood. It is located in a residential area and within a community elementary school property. This Tribal Monitoring location monitors for PM<sub>10</sub>. This site operates one continuous PM<sub>10</sub> monitor that is a FEM instrument. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, wind speed/direction, relative humidity, and precipitation. In addition, this site operates two digital cameras that take images every 15 minutes.

|                  |   | 2013 | 2014 | 2015 |
|------------------|---|------|------|------|
| PM <sub>10</sub> | Max. 24-hr PM <sub>10</sub> Ave. (µg/m <sup>3</sup> ) | 329* | 325* | 191* |
|                  | Number of exceedances 24-hr PM <sub>10</sub>          | 4†   | 8†   | 3†   |
|                  | Annual PM <sub>10</sub> Ave (µg/m <sup>3</sup> )      | 44.5 | 49.9 | 40.6 |

\* Indicates an exceedance of the NAAQS

† Indicates exceptional events concurrence requested at this site and no Regional EPA assessment to date.

# Appendix B

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## EPA-REQUIRED SITE METADATA

Detailed information includes: compliance information regarding air monitoring technical specifications found in 40 CFR §58.10 and Appendices A, C, D, and E (QA, monitoring methods, network design, and monitor siting)

### Site Schematic Descriptions

**Analysis Method (filter samples only)** refers to the method used to process and analyze PM and Pb filter samples.

**Distance from Supporting Structure** refers to those sample probes that are attached to a supporting structure, such as the side of a building. In most cases the sample probe is located above the supporting structure, in which case the entry will show as “N/A”, aka not applicable.

**Distance from Obstructions** refers to those obstructions, both on the roof and off the roof, which are located higher than the probe. In the case of a nearby obstruction being higher than the probe, details of its location will be listed in the entry. If there are no obstructions higher than the probe, then the entry will be N/A.

**Date of Annual Performance Evaluation** refers to the last 2015 QA audit on the gaseous analyzers. These evaluations are performed by the GRIC’s QA personnel. Twenty-five percent of the monitors operating within each gaseous pollutant’s network are evaluated quarterly; thereby, each monitor is evaluated at least once per year as per 40 CFR Part 58, Appendix A, §3.2.2.

**Date of Semi-Annual Flow Rate Audit** refers to the last 2015 QA audit on PM monitors as per 40 CFR Part 58, Appendix A, §§ 3.2.4 and 3.3.4, respectively. These evaluations are performed by the GRIC’s QA personnel at least once every six months.

**Probe Sample Line Material** refers to the material makeup of the intake sample lines.

**Pollutant Sample Residence Time** refers to the amount of time that it takes a sample of air to travel between the probe inlet and the bulkhead of the analyzer. This residence time is calculated by a formula that is based on the sample line’s diameter and length, and the flow rate of the air intake. It is important to keep residence time low to prevent gases in the air sample from reacting with the sample line material or with other gases in the sample; i.e., O<sub>3</sub> could react with nitrogen oxides in the sample if the residence time exceeds 20 seconds.

St Johns

GRIC ID: SJ

AQS ID: 04-013-7003 and TT-614-7003 (Tribal Monitor Code)

Address: 4208 W. Pecos Rd Laveen, AZ

Coordinates: N 33° 17' 24.55", W 112° 09' 35.57"; (elevation 1059 ft)

|  |                          |                                |
|--|--------------------------|--------------------------------|
| <b>- General Information</b>   |                          |                                |
| Pollutant (parameter code)   | O3 (44201)               | PM10 (81102)                   |
| Parameter Occurrence Code (POC)  | 1                        | 1                              |
| Sampling Schedule  | Continuous               | Continuous                     |
| Analysis Method (filters only)   | N/A                      | N/A                            |
| Any Proposal to Remove or Move Monitor?  | No                       | No                             |
| Is site suitable for comparison to PM2.5 NAAQS per Part 58.30?   | N/A                      | N/A                            |
| <b>-Appendix A Requirements</b>  |                          |                                |
| # Precision Checks Performed Annually  | 17                       | 25                             |
| # Accuracy Audits Performed Annually& Date of Last 2015 Check on Gaseous Analyzers & Last Two 2015 Checks for PM | 5,<br>11/04/2015         | 6,<br>9/10/2015 &<br>11/5/2015 |
| All Precision/Accuracy Reports Submitted to AQS?   | Yes                      | Yes                            |
| Annual Data Certification Submitted?   | April 21, 2016           | April 21, 2016                 |
| Frequency of One-Point QC Check  | Bi-Weekly                | N/A                            |
| Frequency of Flow Rate Verification  | N/A                      | Monthly                        |
| <b>-Appendix C Requirements</b>  |                          |                                |
| Sampler Make & Model (method code)   | API T400 (087)           | TEOM 1405 (079)                |
| Date Established   | 03/24/2003               | 01/01/2013                     |
| Classification   | Tribal                   | Tribal                         |
| Method (FRM, FEM, ARM)   | FEM                      | FEM                            |
| <b>-Appendix D Requirements</b>  |                          |                                |
| Monitoring Type  | Population Exposure      | Populations Exposure           |
| Monitoring Scale   | Regional                 | Neighborhood                   |
| Sampling Season  | Jan – Dec (begin 1/1/16) | Jan-Dec                        |
| Network Meets Minimum Number of Monitors Required?   | Yes                      | Yes                            |
| <b>-Appendix E Requirements</b>  |                          |                                |
| Distance between collocated samplers   | N/A                      | N/A                            |
| Probe Inlet Height   | 5.3 meters               | 5.3 meters                     |
| Airflow Arc  | 360 degree               | 360 Degree                     |
| Probe Sample Line Material   | Teflon                   | NA                             |
| Pollutant Sample Residence Time  | 4.8 seconds              | NA                             |
| Distance from Supporting Structure   | NA                       | NA                             |
| Distance from Obstructions   | 14 meters                | 14 meters                      |
| Distance to Furnace Flue   | None                     | None                           |
| Spacing from Trees   | 32 meters                | 32 meters                      |
| Nearest Major Roadway  | Pecos Road               | Pecos Road                     |
| Distance and Direction to Road   | 32 meters, North         | 32 meters, North               |
| Traffic Count (ADT)  | 374 (2003)               | 374 (2003)                     |
| Groundcover  | Gravel, natural soil     | Gravel, natural soil           |

Sacaton

GRIC ID: Sac

AQS ID: 04-021-7001 and TT-614-7001 (Tribal Monitor Code)

Address: 35 Pima Street, PO Box 97, Sacaton, AZ 85147

Coordinates: N 33° 04' 47.88", W 111° 44' 26.27"; (elevation 1280 ft)

|  |                           |                             |
|--|---------------------------|-----------------------------|
| <b>- General Information</b>   |                           |                             |
| Pollutant (parameter code)   | O3 (44201)                | PM10 (81102)                |
| Parameter Occurrence Code (POC)  | 1                         | 1                           |
| Sampling Schedule  | Continuous                | Continuous                  |
| Analysis Method (filters only)   | N/A                       | N/A                         |
| Any Proposal to Remove or Move Monitor?  | No                        | No                          |
| Is site suitable for comparison to PM2.5 NAAQS per Part 58.30?   | N/A                       | N/A                         |
| <b>-Appendix A Requirements</b>  |                           |                             |
| # Precision Checks Performed Annually  | 17                        | 27                          |
| # Accuracy Audits Performed Annually& Date of Last 2015 Check on Gaseous Analyzers & Last Two 2015 Checks for PM | 5,<br>11/3/2015           | 6,<br>9/10/2015 & 11/5/2015 |
| All Precision/Accuracy Reports Submitted to AQS?   | Yes                       | Yes                         |
| Annual Data Certification Submitted?   | April 21, 2016            | April 21, 2016              |
| Frequency of One-Point QC Check  | Bi-Weekly                 | N/A                         |
| Frequency of Flow Rate Verification  | N/A                       | Monthly                     |
| <b>-Appendix C Requirements</b>  |                           |                             |
| Sampler Make & Model (method code)   | API T400 (087)            | TEOM 1400AB (079)           |
| Date Established   | 07/01/2002                | 01/01/2013                  |
| Classification   | Tribal                    | Tribal                      |
| Method (FRM, FEM, ARM)   | FEM                       | FEM                         |
| <b>-Appendix D Requirements</b>  |                           |                             |
| Monitoring Type  | Population Exposure       | Population Exposure         |
| Monitoring Scale   | Regional                  | Neighborhood                |
| Sampling Season  | January – December        | January – December          |
| Network Meets Minimum Number of Monitors Required?   | Yes                       | Yes                         |
| <b>-Appendix E Requirements</b>  |                           |                             |
| Distance between collocated samplers   | N/A                       | N/A                         |
| Probe Inlet Height   | 5 meters                  | 5 meters                    |
| Airflow Arc  | 360 degree                | 360 Degree                  |
| Probe Sample Line Material   | Teflon                    | NA                          |
| Pollutant Sample Residence Time  | 4.8 seconds               | NA                          |
| Distance from Supporting Structure   | NA                        | NA                          |
| Distance from Obstructions   | 25 meters, nearest tree   | 25 meters, nearest tree     |
| Distance to Furnace Flue   | None                      | None                        |
| Spacing from Trees   | 25 meters                 | 25 meters                   |
| Nearest Major Roadway  | W Pima Street             | W Pima Street               |
| Distance and Direction to Road   | 60 meters, South          | 60 meters, South            |
| Traffic Count (ADT)  | 253 (daily average 2008)  | 253 (daily average 2008)    |
| Groundcover  | Pavement and natural soil | Pavement and natural soil   |



Casa Blanca

GRIC ID: CB

AQS ID: 04-021-7004 and TT-614-7004 (Tribal Monitor Code)

Address: Casa Blanca/ Preschool Road, Bapchule, AZ 85221

Coordinates: N 33° 07' 03.14", W 111° 53' 08.93"; (elevation 1203 ft)

|  |                             |
|--|-----------------------------|
| <b>- General Information</b>   |                             |
| Pollutant (parameter code)   | PM10 (81102)                |
| Parameter Occurrence Code (POC)  | 3                           |
| Sampling Schedule  | Continuous                  |
| Analysis Method (filters only)   | N/A                         |
| Any Proposal to Remove or Move Monitor?  | No                          |
| Is site suitable for comparison to PM2.5 NAAQS per Part 58.30?   | N/A                         |
| <b>-Appendix A Requirements</b>  |                             |
| # Precision Checks Performed Annually  | 25                          |
| # Accuracy Audits Performed Annually& Date of Last 2015 Check on Gaseous Analyzers & Last Two 2015 Checks for PM | 5,<br>9/10/2015 & 11/5/2015 |
| All Precision/Accuracy Reports Submitted to AQS?   | Yes                         |
| Annual Data Certification Submitted?   | April 21, 2016              |
| Frequency of One-Point QC Check  | N/A                         |
| Frequency of Flow Rate Verification  | Monthly                     |
| <b>-Appendix C Requirements</b>  |                             |
| Sampler Make & Model (method code)   | TEOM 1400AB (079)           |
| Date Established   | July 1, 2002                |
| Classification   | Tribal                      |
| Method (FRM, FEM, ARM)   | FEM                         |
| <b>-Appendix D Requirements</b>  |                             |
| Monitoring Type  | Population Exposure         |
| Monitoring Scale   | Neighborhood                |
| Sampling Season  | January - December          |
| Network Meets Minimum Number of Monitors Required?   | Yes                         |
| <b>-Appendix E Requirements</b>  |                             |
| Distance between collocated samplers   | N/A                         |
| Probe Inlet Height   | 4.67 meters                 |
| Airflow Arc  | 360 Degree                  |
| Probe Sample Line Material   | NA                          |
| Pollutant Sample Residence Time  | NA                          |
| Distance from Supporting Structure   | NA                          |
| Distance from Obstructions   | 8.9 meters, building to S   |
| Distance to Furnace Flue   | NA                          |
| Spacing from Trees   | 9.6 meters, tree to East    |
| Nearest Major Roadway  | Casa Blanca Road            |
| Distance and Direction to Road   | 19 meters, to north         |
| Traffic Count (ADT)  | 2400 (daily average 2008)   |
| Groundcover  | gravel                      |

# Appendix C

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District Meeting Presentation Slides



# GILA RIVER INDIAN COMMUNITY DEPARTMENT OF ENVIRONMENTAL QUALITY

## **GRIC Air Monitoring Network Review**

Leroy Williams  
GRIC DEQ Air Quality Program  
May 31, 2016

## **Air Monitoring Network Plan**

- **Requirement for Regulatory Monitoring**
- **Review of previous year's air monitoring network**
  - 2015 performance
  - Network modifications
- **30 Day Public Comment Period**
- **Due July 1, 2016**



# 2015 Changes in the Network Plan

- **Insert new federal monitoring requirements**
  - Year round monitoring for ozone, Jan. – Dec.  
(*Changed from a seasonal schedule, April – October*)
- **Relocate Sacaton Site**
  - From old Headstart building to DEQ Admin complex



← → C gricdeq.org/index.php/education--outreach/public-notice

HOME | CALENDAR | S

ABOUT → **EDUCATION →** AIR → | PESTICIDES → | WASTE → | WATER →

**EDUCATION** **OUTREACH**

EDUCATION > PUBLIC NOTICES

**PUBLIC NOTICES**

**Air Quality Program**

- 2015 Ambient Air Monitoring Network Review →
- Public Notice of Ambient Air Monitoring Network Review →
- Public Notice on Exceptional Events within the Gila River Indian Community boundary →

Part of the process for issuing operating permits for facilities includes a 30-day public comment period of the proposed permit. Notice comment period are posted in the *Gila River Indian News* →. Below are the facilities that are currently undergoing the 30-day public comment period. Click on the facility name to view the draft permit.

Public hearings are only held upon written request. To request a public hearing, please mail a copy of the request, including the name of the facility.

# Gila River Indian Community Department of Environmental Quality

Contact Information: GRIC DEQ Air Program  
P.O. Box 97  
Sacaton, Arizona 85147

Phone: (520) 562-2234

Fax: (520) 562-2245

Email: [air@gric.nsn.us](mailto:air@gric.nsn.us)

Website:

<http://www.gricdeq.org>



# Appendix D

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Documentations for Approval to Discontinue Filter-based PM<sub>10</sub> Samplers

## **Leroy Williams Jr**

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**From:** Flagg, MichaelA [Flagg.MichaelA@epa.gov]  
**Sent:** Friday, January 23, 2015 11:39 AM  
**To:** Leroy Williams Jr  
**Cc:** Ryan Eberle; Williams, Jennifer  
**Subject:** RE: GRIC PM10 FRMs

Leroy – because you have installed a TEOM at the site at POC 3, approval is not needed for shutdown of the FRMs. We consider this a method change at the site and not a formal shutdown of the site as a whole.

You should add monitor end dates to both of these monitors in AQS.

Let me know if you have questions.

Thanks!

Michael Flagg  
EPA Region 9  
Air Quality Analysis Office  
P: 415.972.3372  
E: [Flagg.MichaelA@epa.gov](mailto:Flagg.MichaelA@epa.gov)

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**From:** Leroy Williams Jr [<mailto:Leroy.WilliamsJR@gric.nsn.us>]  
**Sent:** Friday, January 23, 2015 7:40 AM  
**To:** Flagg, MichaelA  
**Cc:** Ryan Eberle  
**Subject:** GRIC PM10 FRMs

Michael,

With your preapproval responses via Email last year, we have discontinued monitoring with the FRMs at Casa Blanca Site (7004). We did start monitoring with continuous (TEOM) PM10 monitors on January 1, 2013 at the same site (7001); which will now be the primary PM10 reporting monitor for Casa Blanca. The FRMs were Poc1 and Poc2; the continuous TEOM monitor is Poc3.

Are there other formal documentations need to be completed for the FRMs? And closing them out on AQS?

Please advise.

Thank you.

---

Leroy Williams

**GRIC DEQ Air Quality Program**  
PO Box 97, Sacaton, AZ 85147  
**PH: 520.796.3782**

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# Appendix E

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Documentation for Approval of Sacaton Site Relocation.



#### **D. EPA Approval of the Site Relocation Request for Sacaton**

This enclosure provides EPA's formal review and approval of Gila River Indian Community's (GRIC's) request for the relocation of Tribal Air Monitoring Station (AQS ID 04-021-7001, Tribal ID TT-614-7001) PM<sub>10</sub>, and O<sub>3</sub> monitors at the original Sacaton site (35 Pima Street, Sacaton, AZ 85147, latitude 33.079969, longitude -111.739275) to a new location (latitude 33.079969, longitude -111.740625) 120 meters west of the original location.

Per 40 CFR 58.14, monitoring agencies are required to obtain the U.S. Environmental Protection Agency's (EPA) approval for the relocation of SLAMS monitors. On January 27, 2015 we received GRIC's request to relocate the Sacaton station due to the building where the station is located having been condemned by the GRIC Office of Safety and Health. Based on a review of the information provided in the request, pursuant to 40 CFR 58.14, we approve your selection for the relocation of the original Sacaton station to the new proposed site. Specifically, we have determined that your request meets the provisions under 40 CFR 58.14(c)(6), namely that logistical problems beyond SLOAPCD's control make it impossible to continue operation at the original site and the relocation site is at a nearby location with the same scale of representation.

The new location is 120 meters west of the original location. Inspection of an aerial visual map of the two sites (original and proposed) shows that the area surrounding the two sites is very similar with respect to land use, topography, and presence of trees, and buildings. One would expect similar wind patterns because of the proximity of the sites to each other and surrounding topography, therefore the new location is expected to be at the same scale of representation (i.e., measuring similar PM<sub>10</sub> and O<sub>3</sub> concentrations from similar sources). Based on the weight of evidence and pursuant to 40 CFR 58.14(c)(6), EPA concludes that the relocation does not compromise data collection needed for implementation of the NAAQS, provided that the station meets the appropriate requirements in 40 CFR 58.