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# **Gila River Indian Community 2017 AMBIENT AIR MONITORING NETWORK PLAN**

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District 3, Sacaton



District 5, Casa Blanca



District 6, St Johns



**Gila River Indian Community  
Department of Environmental Quality  
Air Quality Air Monitoring Program  
June 2018**

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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>TAR:</b>	Tribal Authority Rule.
<b>TEOM:</b>	Tapered Element Oscillating Microbalance. A continuous particulate measuring instrument used by the AQP to measure PM <sub>10</sub> .
<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.

## ABSTRACT

In 2017, Gila River Indian Community (GRIC) Department of Environmental Quality (DEQ) Air Quality Program (AQP) successfully operated an air quality Surveillance system that monitored for regulated ambient air pollutants as per 40 CFR Parts 50 and 58. This Annual Monitoring Network Plan (AMNP) documents how the system performed during 2017. The air monitoring data produced are intended for regulatory compliance determinations regarding regulated ambient air pollutants.

The plan covers changes made to the air monitoring in 2017, and it provides supporting information for those changes. In 2017, there were no request waivers from air monitoring regulations. The GRIC DEQ AQP informs personnel at the Environmental Protection Agency's Region 9 (EPA R9) office of any significant data collection interruptions immediately. In early 2017, the air monitoring site at Sacaton was requested for relocation. The utility services and the move were not completed by the end of 2017 as planned, but in early 2018.

During 2017, some notable accomplishments were:

- A senior air monitoring technician was hired;
- A request for approval to relocate the Sacaton monitoring site was submitted to US EPA Region 9 on October 20, 2017 (the Sacaton monitoring site required relocation due to the pending construction of the new District 3 Service Center where the site is currently located);
- The new Sacaton monitoring site was selected and infrastructure was installed;
- The mobile air monitoring trailer was configured and setup near the Sacaton monitoring site to collect concurrent data in preparation for the Sacaton monitor relocation; and
- Three R&P TEOM 1400 monitors, three ozone analyzers, and two ozone calibrators were donated to the Tribal Air Monitoring Support Center.

In the first six months of 2018, the following changes were made to the air monitoring network:

- The AQP completed the relocation of the Sacaton monitoring site to the new location on February 1, 2018. The Sacaton Site was relocated 0.69 miles west from the last location in 2017. The request for approval to move the site was approved by EPA in April 2018;
- The AQP started preparing for the relocation of the St. Johns monitor site, including performing a siting assessment for a temporary (trailer-based) and permanent monitor locations. The site is currently located at the administration offices for the Gila Crossing School, and the Community plans to demolish the existing structures and cut power to the site in July 2018. The new Gila Crossing School is scheduled to be completed for the 2019 school year. It is unknown at this time if a permanent monitoring site will be located on the new school grounds.

From July to December 2018, the AQP plans to setup and run a mobile monitoring site in the vicinity of the current St. Johns monitor. It is anticipated that approximately 30 days of concurrent monitoring data will be collected with both the mobile and fixed monitoring locations before power is turned off at the existing St. Johns monitoring site.

# 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). GRIC does not monitor for these pollutants because they have been found, through discrete sampling and emission inventory, to be at background ambient air quality concentrations. Additionally, GRIC does not have major stationary pollution sources that emit these particular criteria pollutants that may affect the NAAQS within GRIC jurisdictions.

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. 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 2017 monitoring results, changes to the monitoring network in 2017, 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:

- Micro Scale - Defines the concentrations in air volumes associated with area dimensions ranging from several meters up to about 100 meters.
- Middle Scale – Defines the concentration typical of areas up to several city blocks in size with dimensions ranging from about 100 meters to 0.5 kilometer.

- **Neighborhood Scale** – Defines concentrations within some extended area of the city that has relatively uniform land use with dimensions in the 0.5 to 4.0 kilometers range. The neighborhood and urban scales listed below have the potential to overlap in applications that concern secondarily formed or homogeneously distributed air pollutants.
- **Urban Scale** – Defines concentrations within an area of city-like dimensions, on the order of 4 to 50 kilometers. Within a city, the geographic placement of sources may result in there being no single site that can be said to represent air quality on an urban scale.
- **Regional Scale** – Defines usually a rural area of reasonably homogeneous geography without large sources, and extends 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 – Sacaton, Casa Blanca, and St. Johns (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.

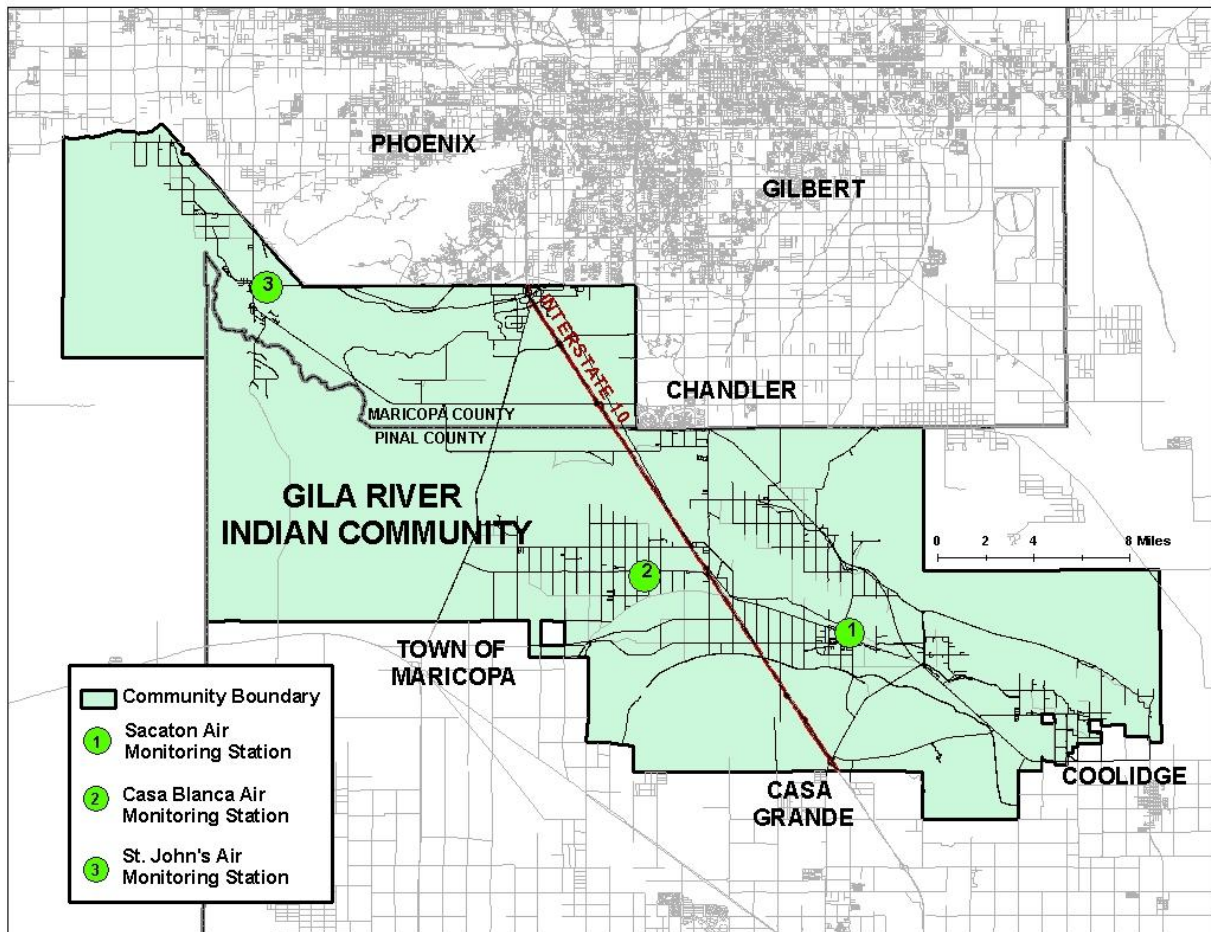


Figure 3-1: Map of Ambient Air Monitoring Stations on Gila River Indian Community

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 2017**

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

Table 3-2 lists these stations, 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	X
Table Notes: PM <sub>10</sub> - Particulate Matter ≤ 10 microns TEOM - Tapered Elemental Oscillating Microbalance. Continuous measuring monitor (1 hr averages).			

Table 3-3 shows the NAAQS for pollutants that are currently monitored by GRIC, including ozone and 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. GRIC continues to not have significant concerns with these additional pollutants as described within the *Introduction* section of this document. 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/ Secondary	Averaging Time	Level	Form
Ozone	primary and secondary	8-hour	0.070 PPM *	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
PM <sub>10</sub>	primary and secondary	24-hour	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years

\* 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 2017, both ozone monitors were reported as operational in AQS from January 1<sup>st</sup> to December 31<sup>st</sup>. Before 2016, 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 2018 and a data review will be performed in June 2018 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 Monitor ID 7002) in 2002 and then relocated 2 miles south to Gila Crossing Middle School (AQS ID TT-614-7003) 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>) and volatile organic compounds (VOC) 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 2017 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.

Then again on October 1, 2015, the EPA lowered the eight-hour ozone NAAQS from 0.075 to 0.070 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 0.070 ppm.

There were three exceedances each, at GRIC's St Johns and Sacaton sites, of the 8-hour primary standard (NAAQS) ozone in 2017. Table 3-5 presents the four highest 8-hour average ozone readings for each monitor during the 2017 monitoring season (January – December).

**Table 3-5. 2017 8-Hour Average Ozone Summary**

Site	Max (PPM) Date	2nd High (PPM) Date	3rd High (PPM) Date	4th High (PPM) Date	Number of Days $\geq 0.070$
St Johns	0.072 7/7/2017	0.071 6/14/2017	0.070 6/13/2017	0.068 4/12/2017	3
Sacaton	0.075 6/14/2017	0.070 6/13/2017	0.070 7/7/2017	0.066 6/15/2017	3

In 2017, 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 or equal to 0.070 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 4<sup>th</sup> Highest 8-Hour Ozone**

Site	2015 4 <sup>th</sup> High (PPM)	2016 4 <sup>th</sup> High (PPM)	2017 4 <sup>th</sup> High (PPM)	3-Year Average of 4 <sup>th</sup> High (PPM)
St Johns	0.067	0.065	0.068	0.066
Sacaton	0.064	0.066	0.066	0.065

### 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 methods 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 2017, 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.



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

The Sacaton and St. Johns 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 2017 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). The interpretation of the standard, Appendix K to Part 50, includes rounding to the nearest 10 µg/m<sup>3</sup> (*i.e.*, values ending in 5 or greater are to be rounded up). 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 2017, there were 16 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 twelve (12) days in 2017 (some exceedances at different monitors occurred on the same day). However, GRIC has flagged 12 of the 16 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 2017.

Exceedances of the 24-hour PM<sub>10</sub> NAAQS at the GRIC monitors also occurred in 2015 and 2016 and were flagged as Exceptional Events by GRIC. As of the date of this report, the EPA has not issued an official concurrence with GRIC's 2015 and 2016 data. Therefore, a determination of compliance with the 24-hour PM<sub>10</sub> NAAQS cannot be made at this time.

**Table 3-7. 2017 24-Hour Average PM10 Summary**

Site Name (Monitor Type)	24-hr Average Max ( $\mu\text{g}/\text{m}^3$ )	24-hr Average 2nd High ( $\mu\text{g}/\text{m}^3$ )	Number of 24-hr NAAQS Exceedances	Estimated Exceedances (Including Exceptional Events requested)	Annual Average ( $\mu\text{g}/\text{m}^3$ )	No. of Exceptional Events	No. of valid days / days possible
St Johns (TEOM)	229* 7/16/2017	158* 3/30/2017	3*	2.4	38.7†	3	345 / 365
Sacaton (TEOM)	321* 7/29/2017	276* 4/28/2017	4*	3.0	46.6†	4	360 / 365
Casa Blanca (TEOM-POC3)	275* 9/7/2017	224* 4/28/2017	9‡	6.7	54.8†	5	357 / 365
* Data has been flagged by GRIC as an Exceptional Event. ‡ 5 of the 9 exceedances have been flagged as an Exceptional Event. †The annual average values include exceptional events data that has not been concurred by EPA.							

### 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 2017

The following changes were made to the monitoring network in 2017:

- The Sacaton Site (TT-614-7001) relocation was requested to USEPA Region 9 on October 20, 2017 for ozone (44201) and PM<sub>10</sub> (81102). However, no approval or physical changes to the network was made during 2017 monitoring season.

### 3.6 Proposed Network Changes and Improvements

The GRIC Air Monitoring Network has made the following changes to the air monitoring network during the first six months of 2018:

- The GRIC District 3 Service Center (local municipality) plans to develop the area where the Sacaton site was located. A request for approval to USEPA Region 9 was submitted on October 20, 2017 and approved in April 2018. The AQP completed the relocation to the new site on February 1, 2018. The Sacaton Site was relocated 0.69 miles west from the last location in 2017. See attachment D.
- The AQP started preparing for the relocation of the St. Johns monitor site, including performing a siting assessment for a temporary (trailer-based) and permanent monitor locations. The site is currently located at the administration offices for the Gila Crossing School, and the Community plans to demolish the existing structures and cut power to the

site in July 2018. The new Gila Crossing School is scheduled to be completed for the 2019 school year. It is unknown at this time if a permanent monitoring site will be located on the new school grounds.

From July to December 2018, the AQP plans to setup and run a mobile monitoring site in the vicinity of the current St. Johns monitor. It is anticipated that approximately 30 days of concurrent monitoring data will be collected with both the mobile and fixed monitoring locations before power is turned off at the existing St. Johns monitoring site.

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## 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 of this document 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 PM<sub>10</sub>, 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. MSA must contain an urbanized area of 50,000 or more population.

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

MSA Population	Most recent 3-year design value ≥85% NAAQS	Most recent 3-year design value <85% NAAQS
>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 Exceeds NAAQS by 20% or more (>180 µg/m <sup>3</sup> )	Medium concentration >80% of NAAQS (>120 µg/m <sup>3</sup> )	Low concentration < 80% of NAAQS (<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. Therefore, for the purposes of this document, the AQP is using the data in Tables D-2 and D-4 as reference only.

The design value is a calculated value based upon the highest recorded concentration 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.

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<sup>1</sup> for GRIC Ozone Monitors, 2015-2017**

MSA	Monitor Site: County	Population <sup>2</sup> (GRIC Census 2017)	8-hour Design Value for 2015- 2017 (ppm)	Site (AQS ID)	Minimum Monitors Required	Number of Active Monitors	Monitors Needed
NA <sup>1</sup>	St. Johns: Maricopa	12,633	0.066	St. Johns (TT-614-7003)	0 <sup>A</sup>	2	0
	Sacaton: Pinal		0.065	Sacaton (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 *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), 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.
2. Number of members who reside within GRIC, 12/31/2016.
- A. A 3-year design value greater than 0.0595 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<sup>1</sup> for GRIC PM10 Monitors, 2015-2017**

MSA	Monitor Site: County	Population <sup>2</sup> (GRIC Census 2016)	Max Concentration ( $\mu\text{g}/\text{m}^3$ )	Site (AQS ID)	Minimum Monitors Required	Number of Active Monitors	Monitors Needed
NA <sup>1</sup>	St. Johns: Maricopa	12,633	321 <sup>A</sup>  179 <sup>B</sup>	St Johns (TT-614-7003 POC1)	0 <sup>C</sup>	3	0
	Sacaton: Pinal			Sacaton (TT-614-7001 POC1)			
	Casa Blanca: Pinal			Casa Blanca (TT-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 *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), 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.
2. Number of members who reside within GRIC, 12/31/2016.
- A. Max concentration including data flagged as exceptional events. Sac site, 7/29/2017.
- B. Max concentration excluding data flagged as exceptional events. CB site, 11/28/2017.
- C. A maximum concentration greater than 180  $\mu\text{g}/\text{m}^3$  would require 1-2 monitors for a population between 100,000 and 250,000 (smallest population group in Table 4-2). A maximum concentration between 120 and 180  $\mu\text{g}/\text{m}^3$  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 4-2 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 6-10 monitors for maximum concentrations >180  $\mu\text{g}/\text{m}^3$  and 4-8 monitors for maximum concentrations between 120 and 180  $\mu\text{g}/\text{m}^3$ .

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 PM10) as established in 40 CFR 58 Appendix D, Tables D-2 and D-4.

## 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 2017 air monitoring data for the Community to USEPA Region 9 Administrator on May 1, 2018 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 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 Sacaton, AZ 85147 attn: GRIC DEQ Director	<a href="mailto:Dale.Ohnmeiss.DEQ@gric.nsn.us">Dale.Ohnmeiss.DEQ@gric.nsn.us</a>	GRIC Air Monitoring Data
United States Environmental Protection Agency	Ariel Rios Building 1200 Pennsylvania Avenue, N.W. Washington, DC 20460	<a href="http://www.epa.gov">www.epa.gov</a> <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 2017. 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 that provides detailed information of air monitoring specifications.

The GRIC network also participates in the National Performance Audit Program that is conducted by the USEPA. Table 4-8 provides the date when the thru-the-probe ozone audit was performed at and the site audited during the 2017 ozone monitoring season.

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

Site	AQS ID	Parameter	2017 Audit Dates
Sacaton	TT-614-7001 (Tribal Monitor)	Ozone (44201)	1/23, 2/22, 3/24, 6/28, and 9/14
St Johns	TT-614-7003 (Tribal Monitor)	Ozone (44201)	1/23, 3/27, 6/29, and 9/18

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

Site	AQS ID	Parameter	2017 Audit Dates
Sacaton (TEOM)	TT-614-7001 (Tribal Monitor)	PM10 (81102)	2/22 3.24, 6/28, , and 9/14
St. Johns (TEOM)	TT-614-7003 (Tribal Monitor)	PM10 (81102)	3/27, 6/29, and 9/18
Casa Blanca (TEOM)	TT-614-7004 POC3 (Tribal Monitor)	PM10 (81102)	3/30 and 9/19

**Table 4-8. National Performance Audit Program (NPAP) Date for GRIC Ozone Monitoring Network**

Site	AQS ID	Parameter	2017 Audit Dates
St Johns	TT-614-7003 (Tribal Monitor)	Ozone (44201)	5/3/2017

## 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 May 30, 2018. 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/index.php/education--outreach/public-notices](http://www.gricdeq.org/index.php/education--outreach/public-notices)).
- Presentation at a scheduled Community public open house event.
- Presentation to the GRIC Natural Resources Standing Committee (DEQ departmental oversight committee) and to the GRIC Council Members.

### 5.1 News Release

The following news release was advertised in the Gila River Indian Newspaper, VOL. 21, No. 11 Edition (dated June 1, 2018):

#### **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 2017. 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/index.php/education--outreach/public-notices>. Additionally, presentation will be provided at Governance Center Lobby, GRIC, Sacaton, AZ on June 6, 2018, 10AM-2PM.

Public comments may be submitted in writing to GRIC DEQ Air Quality, P.O. Box 97, Sacaton, Arizona, 85147, or via email to [air@gric.nsn.us](mailto:air@gric.nsn.us) or comments may be given orally at the scheduled community meeting. Additional information is available from GRIC DEQ Air Quality, 35 Pima Street, Sacaton, Arizona, the AQP website <http://www.gricdeq.org/index.php/air-quality-program>, or by calling 520-562-2234.

There were XX requests made to review the document.



## 5.2 Public Meeting

The AQP also presented a summary of the content of this document during the public open house event on June 6, 2018 at the GRIC Governance Center. A copy of the public announcement and handouts are included as Appendix E. The comments and questions received from the Community members at the meeting are included in Table 5-1 below.

**Table 5-1. Summary of Comments and Questions Received at the Open House Meeting in 2018**

From	Comments / Questions Received

# Appendix A

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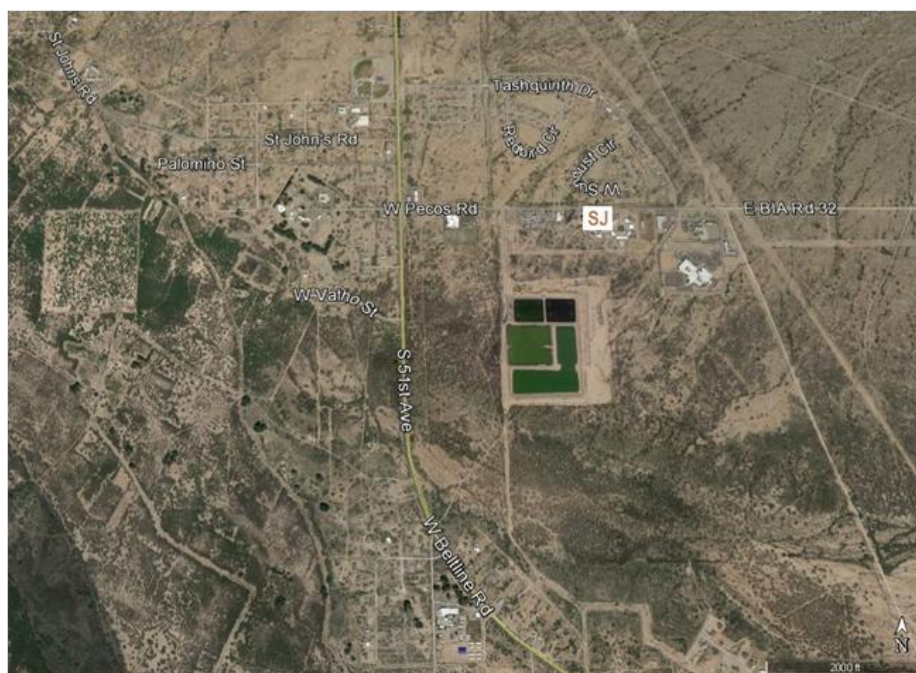
## 2017 AIR MONITORING DATA BY SITE

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

- St. Johns
- Casa Blanca
- Sacaton

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## St. Johns (SJ), TT-614-7003 (Tribal Monitor)



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

**Spatial Scale:** Regional (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 Regional 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. This site also includes two digital cameras that take 15 minute still images.

Pollutant	Condition	2015	2016	2017
O <sub>3</sub>	Max. 8-hr O <sub>3</sub> Average (PPM)	0.072	0.068	0.072
	O <sub>3</sub> # Daily Exceedances > 0.070 PPM	1	0	3
	O <sub>3</sub> 3-year Average of 4 <sup>th</sup> Highest (PPM)	0.068	0.067	0.066
PM <sub>10</sub>	Max. 24-hr PM <sub>10</sub> Average (µg/m <sup>3</sup> )	203*	218*	229*
	Number of exceedances 24-hr PM <sub>10</sub>	2†	2†	3†
	Annual PM <sub>10</sub> Average (µg/m <sup>3</sup> )	26.7‡	33.8‡	38.7‡

\* Indicates an exceedance of the NAAQS

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

‡ The annual average values include exceptional events data that has not been concurred by EPA.

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



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

**Spatial Scale:** Regional (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 Regional 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.



Pollutant	Condition	2015	2016	2017
O <sub>3</sub>	Max. 8-hr O <sub>3</sub> Average (PPM)	0.067	0.069	0.075
	O <sub>3</sub> # Daily Exceedances > 0.070 PPM	0	0	3
	O <sub>3</sub> 3-year Average of 4 <sup>th</sup> Highest (PPM)	0.065	0.065	0.065
PM <sub>10</sub>	Max. 24-hr PM <sub>10</sub> Average (µg/m <sup>3</sup> )	145	201*	229*
	Number of exceedances 24-hr PM <sub>10</sub>	0	5†	4†
	Annual PM <sub>10</sub> Average (µg/m <sup>3</sup> )	30.6‡	40.2‡	46.6‡

\* Indicates an exceedance of the NAAQS

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

‡ The annual average values include exceptional events data that has not been concurred by EPA.



## Casa Blanca (CB), 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.



Pollutant	Condition	2015	2016	2017
PM <sub>10</sub>	Max. 24-hr PM <sub>10</sub> Average (µg/m <sup>3</sup> )	191*	228*	275*
	Number of exceedances 24-hr PM <sub>10</sub>	3†	8†	9†
	Annual PM <sub>10</sub> Average (µg/m <sup>3</sup> )	40.6‡	52.0‡	54.8‡

\* Indicates an exceedance of the NAAQS

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

‡ The annual average values include exceptional events data that has not been concurred by EPA.

# 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 2017 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 2017 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: 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	34	25
# Accuracy Audits Performed Annually& Date of Last 2017 Check on Gaseous Analyzers & Last Two 2017 Checks for PM	4, 9/18/2017	3, 6/29 & 9/18/2017
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes
Annual Data Certification Submitted?	May 1, 2018 (electronic mail)	May 1, 2018 (electronic mail)
Frequency of One-Point QC Check	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	Bi-Weekly
<b>-Appendix C Requirements</b>		
Sampler Make & Model (method code)	TAPI T400 (087)	TEOM 1405 (079)
Date Established	03/24/2003	01/01/2013
Monitor Type	Tribal	Tribal
Method (FRM, FEM, ARM)	FEM	FEM
<b>-Appendix D Requirements</b>		
Site Type	Population Exposure	Populations Exposure
Basic Monitoring Objective	NAAQS Comparison	NAAQS Comparison
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	3.8 seconds	NA
Distance from Supporting Structure	NA	NA
Distance from Obstructions	14 meters	14 meters
Distance to Furnace Flue	None	None
Spacing from Trees	None	None
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: 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?	Yes	Yes
Is site suitable for comparison to PM2.5 NAAQS?	N/A	N/A
<b>-Appendix A Requirements</b>		
# Precision Checks Performed Annually	33	23
# Accuracy Audits Performed Annually& Date of Last 2017 Check on Gaseous Analyzers & Last Two 2017 Checks for PM	5, 9/14/2017	4, 6/28/2017 & 9/14/2017
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes
Annual Data Certification Submitted?	May 1, 2018	May 1, 2018
Frequency of One-Point QC Check	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	Bi-Weekly
<b>-Appendix C Requirements</b>		
Sampler Make & Model (method code)	TAPI T400 (087)	TEOM 1405 (079)
Date Established	07/01/2002	01/01/2013
Monitor Type	Tribal	Tribal
Method (FRM, FEM, ARM)	FEM	FEM
<b>-Appendix D Requirements</b>		
Site Type	Population Exposure	Population Exposure
Basic Monitoring Objective	NAAQS Comparison	NAAQS Comparison
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	3.8 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: 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 2017 Check on Gaseous Analyzers & Last Two 2017 Checks for PM	2, 3/30 & 9/19/2017
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	May 1, 2018
Frequency of One-Point QC Check	N/A
Frequency of Flow Rate Verification	Bi-Weekly
<b>-Appendix C Requirements</b>	
Sampler Make & Model (method code)	TEOM 1405 (079)
Date Established	July 1, 2002
Monitor Type	Tribal
Method (FRM, FEM, ARM)	FEM
<b>-Appendix D Requirements</b>	
Site Type	Population Exposure
Basic Monitoring Objective	NAAQS Comparison
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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EPA Letter of Approval

DRAFT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

OCT 30 2017

Mr. Ryan Eberle  
Air Quality Program Manager  
Department of Environmental Quality/Air Quality Program  
Gila River Indian Community  
Post Office Box 97  
Sacaton, Arizona 85147

Dear Mr. Eberle:

Thank you for your submission of the Gila River Indian Community's (GRIC's) 2016 *Ambient Air Monitoring Network Review* in June 2017. We have reviewed the submitted document based on the requirements set forth under 40 CFR 58. Based on the information provided in the plan, the U.S. Environmental Protection Agency (EPA) approves all portions of the network plan except those specifically identified below. On October 20, 2017, GRIC submitted a formal approval request for the Sacaton relocation. Review of this relocation request will be covered in a separate correspondence.

Please note that we cannot approve portions of the annual network plan for which the information in the plan is insufficient to judge whether the requirement has been met, or for which the information, as described, does not meet the requirements as specified in 40 CFR 58.10 and the associated appendices. EPA Region 9 also cannot approve portions of the plan for which the EPA Administrator has not delegated approval authority to the regional offices. Accordingly, the first enclosure (*A. Annual Monitoring Network Plan Items where EPA is Not Taking Action*) provides a listing of specific items of your agency's annual monitoring network plan where EPA is not taking action. The second enclosure (*B. Additional Items Requiring Attention*) is a listing of additional items in the plan that EPA wishes to bring to your agency's attention.

The third enclosure (*C. Annual Monitoring Network Plan Checklist for Tribes Performing Regulatory Monitoring*) is the checklist EPA used to review your plan for overall items that are required to be included in the annual network plan along with our assessment of whether the plan submitted by your agency addresses those requirements.

The first two enclosures highlight a subset of the more extensive list of items reviewed in the third enclosure. All comments conveyed via this letter (and enclosures) should be addressed (through corrections within the plan, additional information being included, or discussion) in next year's annual monitoring network plan.

Printed on Recycled Paper

If you have any questions regarding this letter or the enclosed comments, please feel free to contact me at (415) 947-4134 or Randall Chang at (415) 947-4180.

Sincerely,

  
Gwen Yoshimura, Manager  
Air Quality Analysis Office

Enclosures:

- A. Annual Monitoring Network Plan Items where EPA is Not Taking Action
- B. Additional Items Requiring Attention
- C. Annual Monitoring Network Plan Checklist For Tribes Performing Regulatory Monitoring

cc (via email): Leroy Williams, GRIC

#### A. Annual Monitoring Network Plan Items where EPA is Not Taking Action

We are not acting on the portions of annual network plans where either EPA Region 9 lacks the authority to approve specific items of the plan, or EPA has determined that a requirement is either not met or information in the plan is insufficient to judge whether the requirement has been met.

- EPA identified items in your agency's annual monitoring network plan where a requirement was not being met or information in the plan was insufficient to judge whether the requirement was being met based on 40 CFR 58.10 and the associated appendices. Therefore, we are not acting on the following items:

Item	Checklist Row	Issue
Statement of whether the operation of each monitor meets the requirements of appendices A, B, C, D, and E, where applicable	3	Insufficient information to judge
Modifications to SLAMS network – case when we are not approving system modifications	4	Insufficient information to judge
Basic monitoring objective for each monitor	44	Insufficient information to judge
Distance from obstructions on roof (horizontal distance to the obstruction and vertical height of the obstruction above the probe should be provided)	56	Insufficient information to judge
Distance from obstructions not on roof (horizontal distance to the obstruction and vertical height of the obstruction above the probe should be provided)	57	Insufficient information to judge

Additional information for each of these items may be found for the row listed in column 2, in the third enclosure (C. Annual Monitoring Network Plan Checklist for Tribes Performing Regulatory Monitoring).

#### B. Additional Items Requiring Attention

- [Item 45]: Site type of population exposure was listed under "monitoring type". This should be corrected in future ANPs.
- [Item 46]: Monitor type of "tribal" was stated on page 4 of the ANP generally for all of the monitors. This should be stated explicitly for each monitor in the site data sheets on pages 27-29 in future ANPs.
- [Item 47]: The O<sub>3</sub> monitors at St Johns and Sacaton are listed as regional scale with a site type of population exposure. Monitors for site type of population exposure should generally be neighborhood or urban scale.
- [Item 58]: In future ANPs, the distance should be noted as from the drip line of the closest tree(s).

# Appendix D

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Sacaton Site Relocation

DRAFT



## GILA RIVER INDIAN COMMUNITY

### DEPARTMENT OF ENVIRONMENTAL QUALITY

October 20, 2017

Sent via email to: [Yoshimura.Gwen@epa.gov](mailto:Yoshimura.Gwen@epa.gov)

Gwen Yoshimura, Acting Manager  
U.S. EPA Region 9  
Air Quality Analysis Office  
75 Hawthorne Street  
San Francisco, CA 94105

#### Re: Request to Relocate Sacaton Air Monitoring Site

Dear Ms. Yoshimura:

This letter serves as a formal request to shut down and relocate the Sacaton Air Monitoring Site (AQS ID 04-021-7001/TT-614-7001) in the Gila River Indian Community. This site monitors for ozone and PM10. The local planning district of the Community plans to redevelop the land where the Sacaton Site is located. The GRIC District 3 officials have informed the GRIC DEQ about the development and requested to vacate the property. As shut-down justification, GRIC DEQ is citing CFR 58.14 (c) (6):

*A SLAMS monitor not eligible for removal under any of the criteria in paragraphs (c)(1) through (c)(5) of this section may be moved to a nearby location with the same scale of representation if logistical problems beyond the State's control make it impossible to continue operation at its current site.*

GRIC DEQ Air Quality Program (AQP) has explored alternate monitoring locations in the Sacaton area, and secured one less than 0.69 miles from the current site where GRIC DEQ Air Quality can continue to effectively monitor for ozone and PM10. GRIC DEQ AQP intends to use the same shelter at the new location, and for that reason the current site needs to be shut down prior to commencement of operation at the new location. Attachment 1 provides site description details showing the current site relative to the proposed new site. GRIC DEQ AQP intends to perform shutdown and relocation during December 2017.

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

Sincerely,

Leroy Williams,  
Environmental Engineer, GRIC DEQ Air Quality Program

cc w/ attachment: Dele Chmness, GRIC DEQ  
Ryan Eberle, GRIC DEQ AQ Program  
Randall Chang, USEPA R9

Post Office Box 97 • Sacaton, Arizona 85147 • (520) 562-2234 • FAX: (520) 562-2245

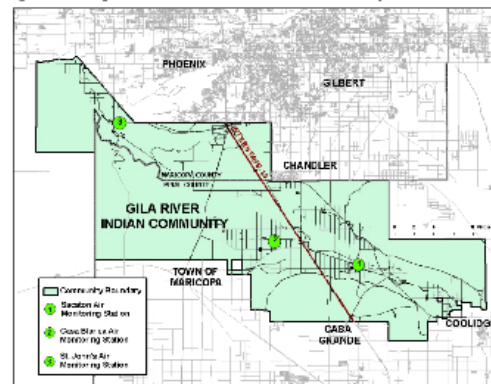
#### Attachment 1 – GRIC Sacaton Tribal Air Monitoring Station Relocation Summary

This document summarizes the Gila River Indian Community's (GRIC or Community) Air Monitoring network and describes the details of the relocation of the Sacaton monitoring station.

#### GRIC Monitoring Network

The GRIC Air Monitoring Network has been established within the Community since 2002. GRIC operates three air monitoring sites (Sacaton, Casa Blanca, and St. John's) where PM10 (particulate matter smaller than 10 microns) and ozone are monitored. GRIC's network was designed and sited at suitable locations within specific geographical areas where utilities and security were key rationale. Figure 1 below displays a map of the GRIC Air Monitoring Network.

Figure 1. Map of the Gila River Indian Community



#### Sacaton Site Background and Reason for Relocation

The Sacaton Site (AQS 04-021-7001) has been monitoring for ozone, PM10 (FRMs – 24 hour filter-based) and meteorological parameters since July 2002. The continuous PM10 pollutant monitoring at Sacaton started January 1, 2013. Air pollution sources for these two criteria pollutants (PM10 and ozone) are from area sources that are beyond the Sacaton community. In addition to the approximately 3,000 residents, Sacaton is the center of commerce and government activity of the Community.

The Sacaton Site is currently located within the GRIC Department of Environmental Quality (DEQ) administration building complex. This current area Site will be developed by the local government planning district of the Community in the near future. Therefore, the GRIC DEQ has been warned numerous times to start making plans for relocation from this area.

### Sacaton Site PM10 Data

The annual averages for 2014 to 2016 are 42.6, 30.6, and 40.2  $\mu\text{g}/\text{m}^3$ , respectively. The Sacaton Site violated the PM10 NAAQS on 3 days in 2014 and 5 days in 2016 (no exceedances in 2015). GRIC has requested claims of exceptional events\* on all eight violations described above. Table 1 below provides the top six maximum PM10 concentrations collected from 2014 to 2016. Figure 1 through Figure 3 below displays PM10 concentrations between 2014 and 2016, respectively. The graphical displays of the PM10 concentrations are charted against the PM10 Air Quality Index (AQI) values. Based on these charts and the annual average concentration values, the air quality of the PM10 concentrations at the Sacaton Site is of "Good Air Quality". The daily violations described above are primarily due to high winds during monsoon seasons and aggressive weather conditions. The primary wind pattern at the Sacaton site area is from the east-southeast in the morning hours and from the west in the afternoon hours.

**Table 1. Maximum 24-hour Average PM10 Concentrations in 2014 to 2016 for Sacaton Site.**

	2014		2015		2016		
	Date	24 hour average PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Date	24 hr ave. PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Date	24 hour average PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	
1 <sup>st</sup> Maximum	10/19	197*	Cold Front, NE	8/29	145	7/29	201*
	9/4	172*	Monsoon/dust storm, W	6/27	136	1/31	171*
2 <sup>nd</sup> Max							
3 <sup>rd</sup> Max	7/25	165*	Habcoob, SW	10/15	107	8/24	164*
4 <sup>th</sup> Max	7/3	154		9/12	90	7/22	160*
5 <sup>th</sup> Max	4/26	140		11/26	87	3/22	156*
6 <sup>th</sup> Max	5/11	140		4/15	78	8/9	153

\* Flagged for exceptional events in Air Quality Systems (AQS)

### Sacaton Site Ozone Data

The Sacaton Site ozone data Design Value Report for 2016 is displayed in Table 2, below. The Sacaton Site is within a rural geographical area. There are no major stationary sources that impact the Sacaton ozone monitor.

**Table 2. USEPA AQS Preliminary Design Value Report.**

Pollutant: Ozone (44201) Design Value Year: 2016  
 Standard Units: Parts per million (ppm)  
 REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.  
 NAAQS Standard: Ozone 8-Hour 2008  
 Statistic: Annual 4<sup>th</sup> Maximum Level: .07 Tribe: Gila River Indian Community

Site ID	Poc	2016			2015			2014			3 - Year		
		Valid Days	Percent Complete	4 <sup>th</sup> Max	Valid Days	Percent Complete	4 <sup>th</sup> Max	Valid Days	Percent Complete	4 <sup>th</sup> Max	% Complete	Design Value	D. V.
TT-614-7001	1	536	92	066	213	100	064	212	99	065	97	065	Y

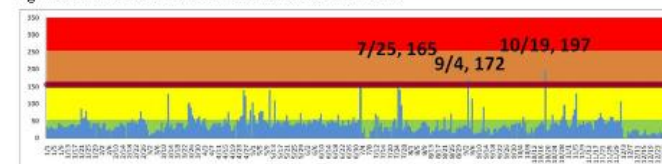
Attachment 1

Page 2 of 7

Chart Legend: Chart parameters for Figures 1 through 3

■ AQI - Unhealthy	■ AQI - Unhealthy for Sensitive Groups
■ AQI - Moderate	■ AQI - Good
■ District 3, Sacaton PM10 Site	■ PM10 National Health Standard

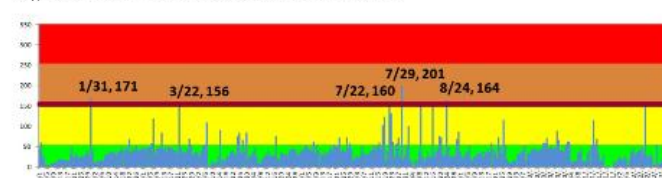
**Figure 1. Sacaton Site PM10 Data Monitored in 2014.**



**Figure 2. Sacaton Site PM10 Data Monitored in 2015.**



**Figure 3. Sacaton Site PM10 Data Monitored in 2016.**



The U. S. Environmental Protection Agency (EPA) has provided a scale called the Air Quality Index (AQI) for rating air quality. The AQI scale is based on the National Ambient Air Quality Standards (NAAQS). This chart is based on the EPA AQI scale for PM10.



Attachment 1

Page 3 of 7



#### **Description and Impacts of the Proposed Sacaton Site Relocation**

The GRIC Air Monitoring Network is requesting relocation of the site to an offsite location that will be approximately 0.69 miles west from the current location (see Figure 3). Photographs of the current Sacaton Site are shown in Figure 4, and photographs of the proposed location for the site are shown in Figure 5. The proposed location is within the fenced area of the GRIC Land Use Planning and Zoning (LUPZ) Department office that provides additional security against vandalism. The current climate-controlled building that is being used now will continue to house the monitoring equipment (see Figure 4) at the relocation site.

The proposed site metadata will have similar information from the current site data and the site will maintain the current scale of representation, see Table 3 below. The only changes to the data will be the geographical coordinates by 0.69 miles and traffic count from nearby Casa Blanca Road. The current coordinates are Latitude 33.079969 Degrees, Longitude -111.739275 Degrees. The new location will be Latitude 33.08166667 Degrees, Longitude -111.75222222 Degrees. Table 3 below provides the relevant metadata related to the Sacaton Site.

**Figure 3. Aerial visual map of the GRIC Sacaton Site (AQS ID 04-021-7001).**



**Figure 4. Sacaton Air Monitoring Site Photos of Current Site Location.**



**Figure 4.1. Sacaton Air Monitoring Station, view to the west direction.**



**Figure 4.2. Sacaton Site, view to the south direction.**



Figure 5. Sacaton Air Monitoring Site Photos of Relocation Site.



Figure 5.1. North view



Figure 5.2. East view



Figure 5.3. South view



Figure 5.4. West view



Table 3. Sacaton Air Monitoring Site Detailed Information

Site Name	Sacaton	
AQS ID	04-021-7001	
GHS Coordinates	N33 04 52.622859, W111 44 17.067146° <i>Current</i> N33 04 53.95, W111 45 08.05° <i>Relocation Site</i>	
Location	Top of Building	
Address	35 Pima St, PO Box 97, Sac., AZ 85147 <i>Current</i> 291 W. Casa Blanca Rd, Sac., AZ 85147 <i>REL Site</i>	
Distance to Road	200 meters ( <i>Current</i> ), 150 meters ( <i>Relocation Site</i> )	
Traffic Count	1122 ( <i>Current</i> ), 2108 ( <i>Relocation Site, 2009</i> )	
Groundcover	Paved/gravel	
Representative Area	Sacaton, AZ	
Pollutant	Ozone	PM 10
Monitoring Objective	Population	Population
Spatial Scale	Urban/Regional	Urban
Sampling Method	Teledyne-API 400T	TEOM 1405
Analysis Method	UV photometric	Gravimetric
Start Date	7/2/2002	September 2013
Operation Schedule	Continuous	Continuous
Sampling Season	All year	All year
Probe Height	4 meters	4 meters
Distance From Supporting Structure	2 meters	n/a
Distance From Obstructions On Roof	n/a	n/a
Distance From Obstructions Not On Roof	n/a	n/a
Distance from trees	n/a	n/a
Distance to Furnace or incinerator flue	n/a	n/a
Distance between collocated monitors	n/a	n/a
Unrestricted airflow	360 deg	360 deg
Probe material	Teflon	n/a
Residence time	4 sec	n/a
Will there be changes within the next 18 months	No	No
Frequency of flow rate verification for PM analyzers	n/a	Monthly
Frequency of one-point QC check (gases)	Bi-weekly	n/a
Last annual performance evaluation (gases)	4/21/2016	n/a

# Appendix E

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## Public Notice and Comment Information

1. Figure E-1. 2018 public notice and news release information.
2. Figure E-2. Public Meeting Attendance.
3. Figure E-3. Public Meeting Handout (*3 page FAQ Sheet*).

DRAFT

Figure E-1. 2018 public notice and news release information.

DRAFT

Figure E-2. Public Meeting Attendance:

DRAFT

Figure E-3. Public Meeting Handout (3 page *FAQ Sheet*):

DRAFT