



Douglas A. Ducey
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY



Misael Cabrera
Director

MAY 08 2019

Submitted online via EPA's Central Data Exchange, State Plan Electronic Collection System (SPeCS)

Mr. Michael Stoker, Regional Administrator
U.S. Environmental Protection Agency, Region 9
Mail Code ORA-1
75 Hawthorne Street
San Francisco, CA 94105

Re: Submittal of the State Implementation Plan Revision – *Ajo PM₁₀ Redesignation Request and Maintenance Plan*

Dear Mr. Stoker:

The Arizona Department of Environmental Quality (ADEQ) hereby adopts and submits to the U.S. Environmental Protection Agency (EPA) the State Implementation Plan (SIP) revision, *Ajo PM₁₀ Redesignation Request and Maintenance Plan*, pursuant to Arizona Revised Statutes §§ 49-104, 49-106, 49-112, 49-402, 49-404, 49-406, 49-425, 49-471.04, and 49-479 and Code of Federal Regulations, Title 40, §§ 51.102 through 51.104.

On November 15, 1990, EPA designated an area in northwest Pima County as nonattainment for the 1987 PM₁₀ National Ambient Air Quality Standards (NAAQS) by operation of law.¹ The Ajo PM₁₀ planning area was also classified as a “moderate” nonattainment area at that time. This SIP revision demonstrates that all Clean Air Act requirements for redesignation to attainment have been met. The analyses and data provided in this plan supersede previous submissions in 1988 and 1991 and show that the area will continue to maintain the PM₁₀ air quality standards through 2031. A new fugitive dust rule (Pima County Code § 17.16.125) ensures that emissions reductions achieved by local sources will continue into the future. ADEQ requests that EPA approve this revision to the Arizona SIP, including the final Pima County rule submitted for approval in Appendix C, and redesignate the Ajo nonattainment area to attainment for the 24-hour PM₁₀ NAAQS.

Prior to its designation as nonattainment for the 1987 PM₁₀ NAAQS, the Ajo area was designated as not meeting the total suspended particulates (TSP) air quality standards. The TSP standards were replaced by the PM₁₀ NAAQS in 1987. ADEQ is not aware of any relevant measures that are contingent upon continuation of the TSP nonattainment designation or would cause a relaxation of control strategies in the area if the TSP designation was removed. Therefore, ADEQ also requests that EPA delete the total suspended particulates nonattainment designation for the Ajo area.

¹ *Designations and Classifications for Initial PM-10 Nonattainment Areas*, 56 FR 11101, March 15, 1991. Codified at 40 CFR 81.303; *Designation of Areas for Air Quality Planning Purposes*, 56 FR 56694, November 6, 1991.

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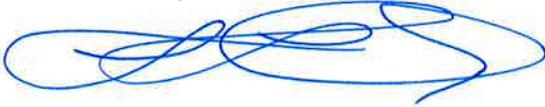
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If you have any questions about this submission, please contact Joseph Martini, Air Quality Improvement Planning Section Manager, at (602) 771-1089.

9105 3 8 YAM

Sincerely,



Timothy S. Franquist
Director, Air Quality Division

Enclosures (1)

Cc: Meredith Kurpius, EPA Region 9
Elizabeth Adams, EPA Region 9
Ursula Nelson, PDEQ
Richard Grimaldi, PDEQ
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SIP Revision: Ajo PM₁₀ Redesignation Request and Maintenance Plan

*Air Quality Division
May 3, 2019 Final*

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Completeness Criteria (40 CFR Part 51, Appendix V, § 2.0)

Appendix V § 2.1 - Administrative Materials

(a) A formal signed, stamped, and dated letter of submittal from the Governor or his designee, requesting EPA approval of the plan or revision thereof (hereafter “the plan”). If electing to submit a paper submission with a copy in electronic version, the submittal letter must verify that the electronic copy provided is an exact duplicate of the paper submission.

See the cover letter for this State Implementation Plan (SIP) submission signed by ADEQ Air Quality Director Tim Franquist. Also included in Appendix B, Exhibit B-I, is a delegation of authority from Misael Cabrera, Director of ADEQ, to Tim Franquist, authorizing Mr. Franquist to perform any act the ADEQ Director is authorized to perform under the state air quality statutes, including the submittal of SIPs to EPA.

This SIP submittal was conducted electronically via the online eSIP system in EPA’s Central Data Exchange. Therefore, no paper copies were submitted.

(b) Evidence that the State has adopted the plan in the State code or body of regulations; or issued the permit, order, consent agreement (hereafter “document”) in final form. That evidence shall include the date of adoption or final issuance as well as the effective date of the plan, if different from the adoption/issuance date.

See the cover letter to this document wherein the state adopts and submits this SIP revision to EPA. This is the method of Arizona state adoption. Additionally, Pima County’s Board of Supervisors adopted the inactive mineral tailings and slag storage area rule (Pima County Code Section 17.16.125) as law on January 22, 2019. See Appendix C for more information.

(c) Evidence that the State has the necessary legal authority under State law to adopt and implement the plan.

The Arizona Department of Environmental Quality has primary responsibility for air pollution control and abatement, and as such, is required to adopt and "maintain a state implementation plan that provides for implementation, maintenance and enforcement of national ambient air quality standards and protection of visibility as required by the clean air act." A.R.S. § 49-404(A). ADEQ also maintains authority to issue and administer rules, adopt county rules, and to submit such rules for approval into the SIP. Copies of Arizona Revised Statutes, Sections 49-104, 49-106, 49-112, 49-402, 49-404, 49-406, 49-425, 49-471.04, and 49-479, are included in Appendix B, Exhibit B-II.

(d) A copy of the actual regulation, or document submitted for approval and incorporation by reference into the plan, including indication of the changes made (such as redline/strikethrough) to the existing approved plan, where applicable. The submission shall include a copy of the official State regulation/document, signed, stamped, and dated by the appropriate State official indicating that it is fully enforceable by the State. The effective date of any regulation/document contained in the submission shall, whenever possible, be indicated in the regulation/document itself; otherwise the State should include a letter signed, stamped, and dated by the appropriate State official indicating the effective date. If the regulation/document provided by the State for approval and incorporation by reference into the plan is a copy of an existing publication, the State submission should, whenever possible, include a copy of the publication cover page and table of contents.

See this SIP revision, the document submitted for approval.

As noted in Section (b) above, ADEQ is also submitting a copy of the regulation, Pima County Code 17.16.125, in Appendix C, to be approved into the Arizona SIP.

(e) Evidence that the State followed all of the procedural requirements of the State's laws and constitution in conducting and completing the adoption/issuance of the plan.

Evidence that ADEQ followed procedural requirements of Arizona state laws and constitution in adopting this plan is included in Appendix B.

(f) Evidence that public notice was given of the proposed change consistent with procedures approved by EPA, including the date of publication of such notice.

Evidence that ADEQ gave notice of the Ajo PM₁₀ SIP revision in accordance with A.R.S. § 49-444 is included in Appendix B, Exhibit B-III.

ADEQ published a notice of this SIP revision in the Ajo Copper News on December 25, 2018, and January 1, 2019, in the Arizona Daily Star on December 26 and 27, 2018, and on ADEQ's Website on December 26, 2018. Public notice was also sent to an email subscriber list of interested stakeholders on December 26, 2018.

Evidence that Pima County gave notice for the adoption of Pima County Code 17.16.125 and revision of the Pima County portion of the Arizona SIP is included in Appendix C.

(g) Certification that public hearing(s) were held in accordance with the information provided in the public notice and the State's laws and constitution, if applicable and consistent with the public hearing requirements in 40 CFR 51.102.

ADEQ held a public hearing on the Ajo PM₁₀ SIP revision on January 24, 2019. Certification and other documents related to the hearing are included in Appendix B. Public hearing information for county adoption of Pima County Code 17.16.125 and revision of the Pima County portion of the Arizona SIP is included in Appendix C.

(h) Compilation of public comments and the State's response thereto.

The public comment responsiveness summary for the Ajo PM₁₀ SIP revision is contained in Appendix B, Exhibit B-VIII.

Appendix V § 2.2 - Technical Support

(a) Identification of all regulated pollutants affected by the plan.

This SIP revision applies to the 1987 PM₁₀ National Ambient Air Quality Standards. The plan includes provisions for the regulation of PM₁₀ emissions.

(b) Identification of the locations of affected sources including the EPA attainment/ nonattainment designation of the locations and the status of the attainment plan for the affected areas(s).

This SIP revision is applicable to sources within the Ajo Moderate PM₁₀ nonattainment area. See Section 1.6.1 and Chapters 3 and 4 for a description of the area and sources within the nonattainment area boundary.

(c) Quantification of the changes in plan allowable emissions from the affected sources; estimates of changes in current actual emissions from affected sources or, where appropriate, quantification of changes in actual emissions from affected sources through calculations of the differences between certain baseline levels and allowable emissions anticipated as a result of the revision.

See Section 4.3 and the emissions inventory submitted with this SIP revision in Appendix A for information on emissions changes in the Ajo planning area.

(d) The State's demonstration that the national ambient air quality standards, prevention of significant deterioration increments, reasonable further progress demonstration, and visibility, as applicable, are protected if the plan is approved and implemented. For all requests to redesignate an area to attainment for a national primary ambient air quality standard, under section 107 of the Act, a revision must be submitted to provide for the maintenance of the national primary ambient air quality standards for at least 10 years as required by section 175A of the Act.

See Chapters 2 and 6 and the Technical Support Document in Appendix A for demonstrations that the PM₁₀ NAAQS have been attained and will be maintained through 2031. As is indicated in Section 1.2 and Chapter 4, this SIP revision will add to existing SIP rules with requirements that are either as stringent or more stringent.

(e) Modeling information required to support the proposed revision, including input data, output data, models used, justification of model selections, ambient monitoring data used, meteorological data used, justification for use of offsite data (where used), modes of models used, assumptions, and other information relevant to the determination of adequacy of the modeling analysis.

See the Technical Support Document in Appendix A for a description of methods used to demonstrate maintenance of the NAAQS and estimate emissions in the nonattainment area.

(f) Evidence, where necessary, that emission limitations are based on continuous emission reduction technology.

Emission reduction methods, or controls, are described in detail in Chapter 4 of the SIP, *Permanent and Enforceable Improvement in Air Quality*. Information on the demonstration of maintenance based on the described controls can be found in Chapter 6, *Maintenance Plan*, and the Technical Support Document in Appendix A.

(g) Evidence that the plan contains emission limitations, work practice standards and recordkeeping/reporting requirements, where necessary, to ensure emission levels.

Description of control strategies, including recordkeeping and reporting requirements are contained in Chapter 4 of the SIP. Copies of the regulation, Pima County Code 17.16.125 – *Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM10 Planning Area*, are included in Appendix C.

(h) Compliance/enforcement strategies, including how compliance will be determined in practice.

The compliance/enforcement strategies are incorporated into the regulation cited above and discussed in detail in Chapter 4 of this SIP revision.

(i) Special economic and technological justifications required by any applicable EPA policies, or an explanation of why such justifications are not necessary.

No known deviations from EPA policy.

1 Introduction

Chapter 1 describes the purpose of this State Implementation Plan (SIP) revision for the Ajo PM₁₀ nonattainment area, presents general regulatory requirements for PM₁₀ planning areas, and provides an overview and history of the nonattainment area.

1.1 Statement of Purpose

Pursuant to Section 107(d)(4)(B) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) designated an area in northwest Pima County as a “moderate” nonattainment area for the 1987 24-hour PM₁₀ National Ambient Air Quality Standards (NAAQS) in 1990.¹ EPA based its designation on recorded violations of the standard at an ambient monitoring site within the County.

Under the authority granted by the Governor and the State of Arizona, the Arizona Department of Environmental Quality (ADEQ) is responsible for the preparation and submittal of this State Implementation Plan revision.²

This document summarizes the progress of the Ajo area in attaining the PM₁₀ NAAQS and demonstrates that all CAA requirements for redesignation to attainment have been satisfied. The clean air quality record, enforceable control measures, and projections of future emissions all show that the area will continue to maintain the PM₁₀ air quality standards through 2031 (see Chapters 2, 4, and 6). With this submittal, ADEQ requests that EPA approve the enclosed maintenance plan and redesignate the Ajo nonattainment area to attainment for the 24-hour PM₁₀ NAAQS.

Prior to its designation as nonattainment for the 1987 PM₁₀ NAAQS, the Ajo area was designated as not meeting the total suspended particulates (TSP) air quality standards.³ ADEQ is not aware of any relevant measures that are contingent upon continuation of the TSP nonattainment designation or would cause a relaxation of control strategies in the area if the TSP designation were deleted. Therefore, ADEQ also requests that EPA remove the total suspended particulates nonattainment designation for the Ajo area (see Chapter 3).

1.2 Rules to Be Added to and Removed from the SIP

Table 1-1 documents the rule submitted for approval as a component of the Arizona SIP. The Pima County Department of Environmental Quality (PDEQ) adopted a new rule into Pima County Code (PCC) Title 17 - *Air Quality Control*, Chapter 17.16 – *Emission Limiting Standards*, to provide permanence and enforceability for control measures implemented in the Ajo PM₁₀ nonattainment area. A Notice of Proposed Rulemaking was posted on October 26, 2018, opening a public comment period for the new rule. The rule was approved by the County Board of Supervisors on January 22, 2019, with an effective

¹ EPA replaced total suspended particulates with a new indicator for particulate matter, PM₁₀, in 1987. The PM₁₀ standard refers to particulate matter that is less than or equal to 10 micrometers. See also Section 1.4.

² See Arizona Revised Statutes (A.R.S.) §§ 49-401, 402, 404, and 406 and *Memorandum of Agreement among the Arizona Department of Environmental Quality, Arizona Department of Transportation, Pima County Department of Environmental Quality, and Pima Association of Governments*, August 2000.

³ See 40 CFR 81.303.

date of February 21, 2019. The proposed and final rule and other rulemaking documentation are included in Appendix C. Discussion of the rule is included in Chapter 4 of this document.

Table 1-1 Rules to Be Added to and Removed from the SIP

Rule Added	SIP Rule(s) Replaced
Pima County Code 17.16.125 – <i>Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM₁₀ Planning Area</i>	None

1.3 National Ambient Air Quality Standards

Title I of the CAA requires EPA to set National Ambient Air Quality Standards for those pollutants that are considered harmful to both public health and the environment. EPA sets standards for six air pollutants: ground-level ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead. There are two types of NAAQS: primary and secondary. Primary standards are set to protect human health and secondary standards are established to protect public welfare, such as decreased visibility and damage to animals, crops, vegetation, and buildings.⁴

The standard for each pollutant is set at a maximum concentration in either parts per million (ppm) by volume, parts per billion (ppb) by volume, or micrograms per cubic meter of air (µg/m³). Each standard also has a distinct averaging time in order to provide the necessary level of protection. These standards are periodically reevaluated and are either retained or revised based on review of scientific literature and analyses.⁵

1.4 PM₁₀ NAAQS

Particulate matter (PM), or particle pollution, is a complex mixture of very small particles and liquid droplets found in the air. Particulate matter can be directly emitted by a source such as smokestacks, fires, unpaved roads, or construction sites. These particles can also be formed in the atmosphere when gaseous pollutants such as sulfur dioxides and nitrogen oxides undergo complex chemical reactions to form fine particles.⁶

On July 1, 1987, EPA revised the national ambient air quality standards for PM by replacing total suspended particulates with a new indicator for particulate matter, PM₁₀.⁷ This new indicator included particles with an aerodynamic diameter less than or equal to 10 micrometers. In order to attain the NAAQS for the 24-hour PM₁₀ standard, an air quality monitor cannot measure levels of PM₁₀ greater than 150 µg/m³ more than once per year on average over a consecutive three-year period.⁸ Table 1-2 provides a summary of the PM₁₀ NAAQS for each of EPA’s review cycles from 1987 through 2012.⁹

⁴ See <https://www.epa.gov/criteria-air-pollutants/naaqs-table> (last visited August 4, 2017).

⁵ See CAA § 109 (42 U.S.C. 7409 [2015]).

⁶ See <https://www.epa.gov/pm-pollution> (last visited August 4, 2017).

⁷ See *Revisions to Ambient Air Quality Standards for PM*, 52 FR 24634, July 1, 1987 (codified at 40 CFR 50.6).

⁸ As calculated rounding to the nearest 10 µg/m³, according to 40 CFR 50, Appendix K (2015). For example, consistent with the rounding conventions, a value of 154 µg/m³ is rounded down to 150 µg/m³.

⁹ The historical PM NAAQS also include “total suspended particulates” and PM_{2.5}, neither of which is included in this summary.

Table 1-2 PM₁₀ NAAQS History

Date	Final Rule Citation	Primary/Secondary	Averaging Time	Level	Form
1987	52 FR 24634 July 1, 1987	Primary and Secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over a 3-year period.
			Annual	50 µg/m ³	Annual arithmetic mean averaged over 3 years.
1997	62 FR 38652 July 18, 1997	Primary and Secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over a 3-year period. ¹⁰
			Annual ¹¹	50 µg/m ³	Annual arithmetic mean averaged over 3 years.
2006	71 FR 61144 Oct. 17, 2006	Primary and Secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over a 3-year period.
2012	78 FR 3086 Jan. 15, 2013	Primary and Secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over a 3-year period.

1.5 Regulatory Background

PM₁₀ Nonattainment Designation and SIP Submittals

As noted above, EPA revised the national ambient air quality standards for particulate matter in 1987 by replacing total suspended particulates with PM₁₀ as the indicator for the particulate matter NAAQS.

Due to a general lack of available ambient PM₁₀ monitoring data, EPA created a tiered scale to categorize areas based on their probability of violating the new standards. An area with a high probability of violating the standards was classified as a Group I area; an area with a moderate probability of violating was classified as a Group II area; and an area likely to attain the standards was classified as a Group III area. The Ajo area was listed as a “Group II Area,” or an area with a moderate likelihood of violating the PM₁₀ NAAQS.¹² Arizona was required to submit a SIP revision under CAA section 110 within nine months of promulgation of the new NAAQS, including enforceable commitments to collect and report ambient PM₁₀ data. On December 28, 1988, the state submitted *PM₁₀ Committal State Implementation Plan, Ajo Group II Area*.

Following the CAA amendments of 1990, areas were designated nonattainment for PM₁₀ by operation of law and classified as “moderate” under CAA, Title I, Part D where violations of the PM standard were recorded prior to January 1, 1989; these areas included the former Ajo Group II PM₁₀ planning area. EPA

¹⁰ The form of the standard was initially promulgated as 99th percentile, averaged over 3 years; when the 1997 standards were vacated, the form of the 1987 standards remained in place. *See National Ambient Air Quality Standards for PM*, 69 FR 45592, July 30, 2004.

¹¹ EPA revoked the annual PM₁₀ NAAQS in 2006. *See National Ambient Air Quality Standards for PM*, 71 FR 61144, October 17, 2006.

¹² *See* 52 FR 24672, July 1, 1987; 52 FR 29383, August 7, 1987; and 55 FR 45799, October 31, 1990 (the October 31, 1990, publication defined the township boundaries included in the Ajo Group II Area).

published a list and defined the boundaries of the designated PM₁₀ areas on March 15, 1991.¹³ The designations and classifications were subsequently codified at 40 CFR 81.303.¹⁴

Under section 189(a)(2) of the amended Act, the state was required to submit a revised SIP for the Ajo nonattainment area by November 15, 1991, and demonstrate attainment of the PM₁₀ NAAQS by December 31, 1994. Arizona submitted *Final State Implementation Plan for the Ajo PM₁₀ Nonattainment Area* on November 15, 1991. EPA identified several approvability issues in a September 3, 1992, letter, noting that the SIP did not include an adequate reasonably available control measure (RACM) analysis and attainment demonstration, or provide evidence of enforceability for the submitted control strategy.¹⁵ EPA did not otherwise act on the plan.

“Clean Data Determination”

On February 8, 2006, EPA determined that the area had attained the PM₁₀ NAAQS.¹⁶ Under EPA’s clean data policy, this determination, known informally as a “clean data finding,” relieves the obligation to meet certain CAA requirements for PM₁₀ nonattainment areas under Title I, Part D, Subpart 1 and Subpart 4. The requirements for a state to submit and obtain approval for the SIP components listed below are suspended for as long as the area continues to attain the NAAQS.

- reasonable further progress (RFP) plan
- demonstration of attainment by the applicable attainment date
- reasonably available control measures (RACM)
- nonattainment plan contingency measures

Following a clean data finding, a state need only submit a SIP that includes the following elements to complete the remaining CAA requirements for the nonattainment area.

- an emissions inventory
- documentation of a permitting program that meets the requirements of CAA section 173
- documentation that the state meets applicable provisions of CAA section 110(a)(2)
- commitments for future conformity demonstrations

Emissions inventories and other documentation were submitted in the 1991 Ajo nonattainment area plan. The current redesignation request and maintenance plan, however, supersedes previous submissions.

The determination of attainment does not constitute a redesignation of the area to attainment. The nonattainment designation remains until EPA determines that the planning area meets additional CAA provisions required for redesignation including the following.¹⁷

- area has attained the NAAQS (current)
- area has a fully approved implementation plan under CAA section 110(k)
- area has demonstrated that the improvement in air quality is due to permanent and enforceable control measures

¹³ See 56 FR 11101, March 15, 1991.

¹⁴ See 56 FR 56694, November 6, 1991.

¹⁵ See letter from Steve Pardiek, EPA Region IX, to Ira Domsy, ADEQ, September 3, 1992.

¹⁶ See 71 FR 6352, February 8, 2006. EPA’s determination was based on certified, quality assured ambient air monitoring data for the period 2002-2004.

¹⁷ See CAA 107(d)(3)(E)(i) through 107(d)(3)(E)(v).

- area has a fully approved maintenance plan under CAA section 175A (demonstrating continued attainment for 10 years after redesignation)
- area meets all applicable requirements under CAA section 110 and part D (e.g., infrastructure and nonattainment area requirements)¹⁸

Ambient PM₁₀ exceedances in 2011 and 2013 contributed to violations of the NAAQS for the period 2011-2013. More recent data, however, shows the area has been in compliance with the air quality standards in 2014, 2015, 2016, and 2017 (see Chapters 2 and 4).

Sources of PM₁₀

Historically, the primary sources of PM₁₀ emissions in the Ajo nonattainment area were fugitive dust from tailings piles, mining, milling, distilling, and smelting processes at the Phelps Dodge Corporation copper mine and smelter.¹⁹ Additional sources included Minerals Research & Recovery Inc. (MRRRI), a slag reprocessing facility, vehicular traffic on Highway 85, a landfill, unpaved roads, construction, and windblown dust from open areas.

1.6 Nonattainment Area Description

The following sections describe the boundary of the nonattainment area and provide information on the geography, climate, population, and economy of Pima County and the PM₁₀ planning area.

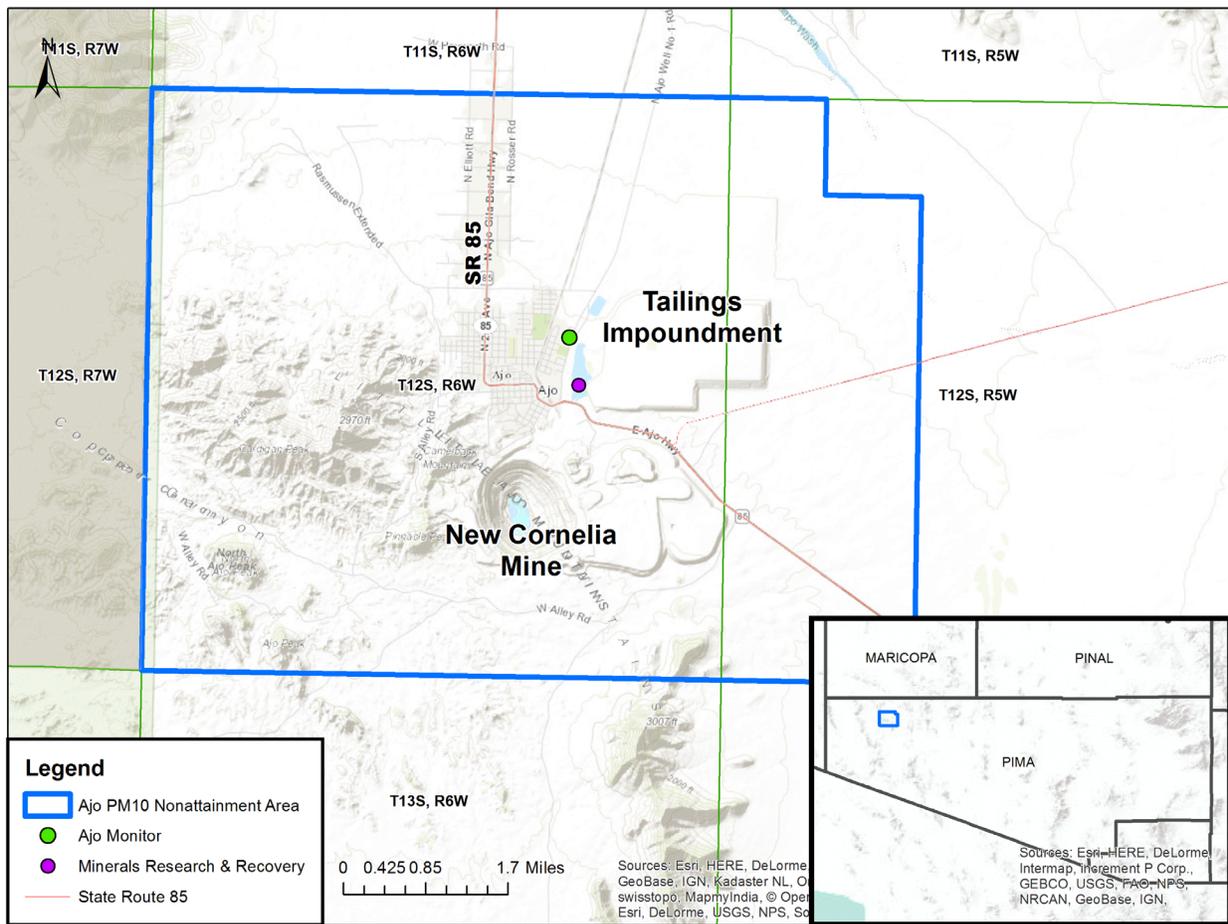
1.6.1 Nonattainment Area Boundary

The boundaries of the Ajo PM₁₀ nonattainment area are defined by one full and one partial township as codified at 40 CFR 81.303. Figure 1-1 below illustrates the location of the area.

¹⁸ In general, only those section 110 and part D elements that are linked with a particular nonattainment area's designation and classification, or permitting requirements that are associated with an area's demonstration of continued attainment, are applicable requirements for purposes of redesignation. See discussion in Section 5.1 of this document.

¹⁹ This closed facility is now owned by Freeport McMoRan Copper & Gold Inc. (FMI), the successor to Phelps Dodge Corporation.

Figure 1-1 Ajo PM₁₀ Nonattainment Area



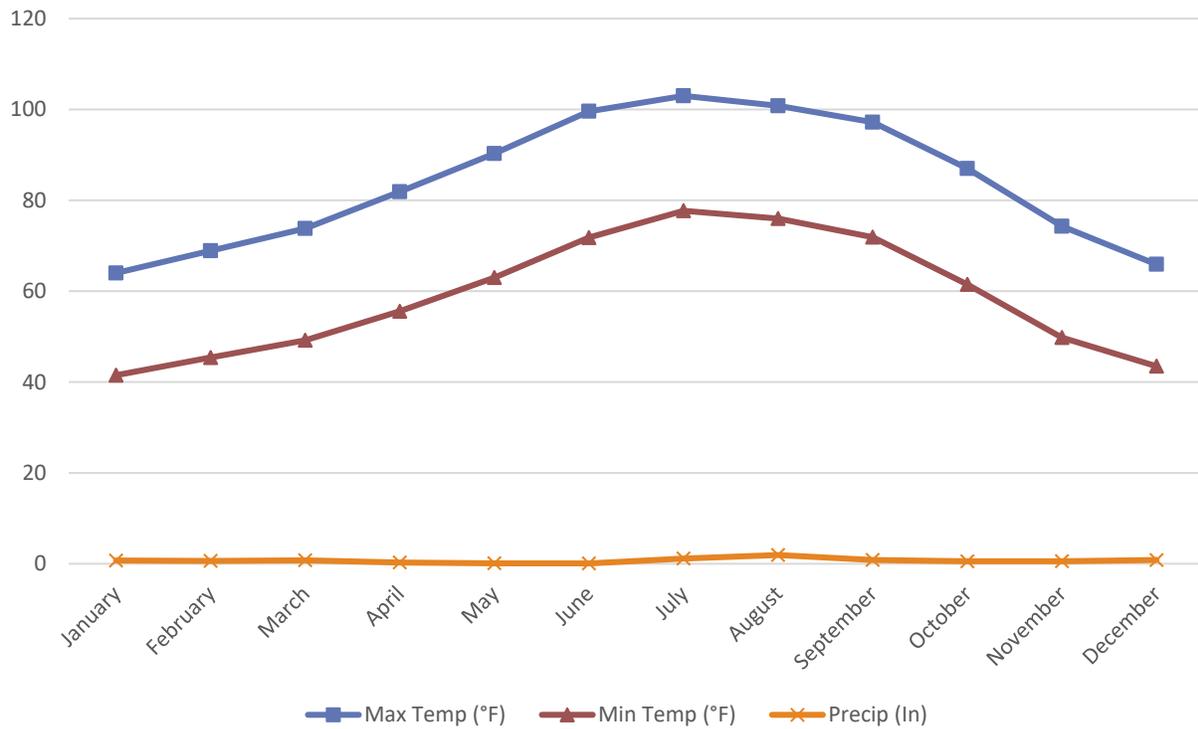
1.6.2 Geography and Climate

Ajo is a small former mining community in the northwest corner of Pima County approximately 90 miles southwest of Phoenix and 113 miles west northwest of Tucson. The unincorporated town is located on the edge of a broad desert valley at an elevation of 1750 feet, bordered by scattered hills and low mountain ranges to the west and south.

Cabeza Prieta National Wildlife Refuge is adjacent to the nonattainment area on the west. The Barry M. Goldwater Air Force Range is less than one mile north and the Tohono O’odham Nation lies approximately five miles to the east. Organ Pipe National Monument is located ten miles to the south.

The climate is warm and arid in the nonattainment area and the county in general. In the community of Ajo average monthly maximum temperatures range from 64.0°F to 103.0°F, and average monthly minimum temperatures range from 41.5°F to 77.7°F. The driest time of the year for the area is typically April through June followed by September through November. Average annual precipitation is 8.40 inches. Figure 1-2 shows average monthly temperatures and precipitation for Ajo, Arizona.

Figure 1-2 Monthly Average Temperatures and Precipitation – Ajo, Arizona



Source: Western Regional Climate Center, monthly climate summary Ajo, AZ; period of record May 1, 1914 to December 31, 2005.

1.6.3 Population

Population statistics provide information regarding the number of people impacted by changes in air quality in the Ajo area and can also be used as a surrogate for estimating current and future emissions from certain source categories (*see also* Appendix A, Section A1.4).

From a high of more than 7,000 inhabitants in 1960, the population of the Ajo Census Designated Place (CDP) declined to around 3,000 residents in 2010, according to the U.S. Census.²⁰ The most significant reduction occurred between 1980 and 1990 when the population of Ajo decreased by nearly 44 percent, reflecting the waning of mining activities and the shutdown of the Ajo copper smelter in 1985 (*see* Sections 1.6.4 and 4.1). Since that time, the area has experienced little growth compared to other cities and towns in the County. A moderate rebound in residents was experienced in the 1990s, but much of this growth was lost in the following decade. By contrast, the population of Pima County as a whole nearly doubled between 1980 and 2010. The majority of population growth, however, occurred outside the Ajo Planning Area in the eastern part of the County, including its largest population centers; Tucson, Oro Valley, and Marana. Decennial census data for Ajo and Pima County are shown in Table 1-3.

²⁰ Census Designated Places (CDPs) are delineated for the decennial census. CDPs are places that are not legally incorporated and represent the statistical counterparts of incorporated places such as cities or towns.

Table 1-3 Decennial Census Population of Ajo CDP and Pima County 1960-2010

Area/Percent Change	April 1, 1960	April 1, 1970	April 1, 1980	April 1, 1990	April 1, 2000	April 1, 2010
Ajo CDP	7,049	5,881	5,189	2,919	3,705	3,304
Ajo Decennial Change		-16.6%	-11.8%	-43.7%	26.9%	-10.8%
Pima County	265,660	351,667	531,443	666,957	843,746	980,263
Pima County Decennial Change		32.4%	51.1%	25.5%	26.5%	16.2%

Source: U.S. Bureau of the Census, decennial census counts.

Pima County and Ajo nonattainment area population estimates and projections of selected years for the period 2011 through 2031 are presented in Table 1-4.²¹ The population of the nonattainment area is expected to increase 17 percent between 2016 and 2031, the end of the first maintenance period (see Section 6.2).

Table 1-4 Projected Population Growth 2011-2031

Area	2011	2014	2016	2021	2026	2031
Ajo Nonattainment Area	3,226	3,295	3,314	3,521	3,707	3,884
Pima County	986,081	1,007,162	1,013,103	1,076,100	1,133,000	1,187,100

Source: Arizona Department of Administration (ADOA), Office of Economic Opportunity; medium series projections for future years.

1.6.4 Economy

Ajo was one of several early settlements in Arizona in which mining and copper smelting were of prominent importance. Originally, ores from Ajo were shipped to smelters in Wales, and later, to a Phelps Dodge Corporation smelter in Douglas, Arizona, before the company began smelting operations in Ajo in 1950. For several decades, more than 1,000 persons were employed by Phelps Dodge at Ajo, until the closure of its facilities in 1985. The economic viability of this area is currently enhanced by natural scenic attractions, a casino, and other amenities. The only major highway in the Ajo area is Arizona State Route 85 which connects Ajo with U.S. Interstate 8 to the north and allows the area to serve as a gateway for tourists and other visitors to Mexico, Organ Pipe Cactus National Monument, Cabeza Prieta National Wildlife Refuge, and the Tohono O'odham Indian Reservation.

According to the Arizona Department of Administration, the Ajo CDP labor force increased by more than 88 percent in the previous decade, from 755 in 1990 to 1,421 in 2010. Although population grew at a

²¹ The urbanized portion of the Ajo CDP is located almost entirely within the PM₁₀ nonattainment area.

slower rate over the same period, labor force growth in the Ajo CDP may be attributed to additional employers in the local economy and an increase in persons actively seeking work. Employment is mainly in the commercial, service, and tourism sectors. Unemployment rose from 6.9 percent in 1990 to 16.1 percent in 2010, with the sharpest increase occurring between 2005 and 2010, likely due to the recent economic recession. Table 1-5 shows a selected time series of civilian labor force statistics.

Table 1-5 Labor Force Data for the Ajo CDP

Employment Statistic (annual average)	1990	1995	2000	2005	2010	2015
Labor Force	755	939	1,129	1,219	1,421	1,586
Number Unemployed	52	45	79	101	229	405
Unemployment Rate	6.9%	4.8%	7.0%	8.3%	16.1%	25.5%

Source: Average annual labor force data, Arizona Department of Administration, Local Area Unemployment Statistics, updated December 15, 2011. Data for 2015 obtained from U.S. Census Bureau, American Community Survey 5-year estimates, March 6, 2018 (data estimate margin of error +/-9.7 percent).

1.7 General SIP Approach

1.7.1 Clean Air Act Requirements for Redesignation

Clean Air Act Title I, Part A, Section 107 contains the planning and control elements necessary for EPA to redesignate a nonattainment area to attainment. Table 1-6 lists those requirements and explains how the demonstrations included in this document satisfy those obligations for the Ajo PM₁₀ planning area.

Table 1-6 Clean Air Act Requirements for Redesignation to Attainment

CAA Citation	Requirement	Action to Meet Requirement	Location in Document
§ 107(d)(3)(E)(i) – Attainment of the Standard	<i>A nonattainment area cannot be redesignated to attainment unless the EPA Administrator determines that the area has attained the national ambient air quality standard.</i>	On February 8, 2006, EPA determined that the Ajo nonattainment area had attained the PM ₁₀ NAAQS. The area is also currently attaining the PM ₁₀ standard. Chapter 2 includes a summary of historical and current air quality data.	Section 1.5 and Chapter 2
§ 107(d)(3)(E)(ii) – Fully Approved Implementation Plan	<i>The area must have a fully approved implementation plan under section 110(k).</i>	This SIP revision includes documentation that Clean Air Act requirements for the nonattainment area have been	Chapters 3 and 5

CAA Citation	Requirement	Action to Meet Requirement	Location in Document
		met and includes a maintenance plan demonstrating attainment of the NAAQS through 2031. ADEQ requests full approval of all outstanding obligations.	
§ 107(d)(3)(E)(iii) – Permanent and Enforceable Improvement in Air Quality	<i>The state must demonstrate, and EPA concur, that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the applicable implementation plan and applicable Federal air pollutant control regulations and other permanent and enforceable reductions.</i>	The primary measures responsible for bringing the area into attainment are the stabilization of the Ajo tailings impoundments in 1991 and slag reprocessing area in 2015. Chapter 4 describes the measures adopted to ensure continued attainment and maintenance of the PM ₁₀ NAAQS.	Chapter 4
§ 107(d)(3)(E)(iv) – Maintenance Plan	<i>The area must have a fully approved maintenance plan meeting the requirements of CAA section 175A.</i>	This SIP revision includes a maintenance plan that demonstrates continued attainment through 2031.	Chapter 6
§ 107(d)(3)(E)(v) – Section 110 and Part D Requirements	<i>The state must meet all requirements applicable to the area under section 110 and part D.</i>	Demonstrations that all applicable implementation plan requirements have been met are included in Chapter 5.	Chapter 5

Table 1-7 lists CAA Maintenance Plan requirements and indicates how these requirements are met by the Ajo PM₁₀ planning area.

Table 1-7 CAA Requirements for Maintenance Plans

CAA Citation	Requirement	Action to Meet Requirement	Location in Document
§ 175A(a) – Plan Revision	<i>Each state that submits a request to redesignate a nonattainment area to attainment shall also submit a revision to the applicable state implementation plan to provide for maintenance of the NAAQS</i>	This plan includes control measures necessary to demonstrate maintenance of the PM ₁₀ NAAQS through 2031.	Chapters 4 and 6

CAA Citation	Requirement	Action to Meet Requirement	Location in Document
	<i>for at least 10 years after the redesignation. The plan should contain additional measures, as may be necessary, to ensure such maintenance.</i>		
§ 175A(b) – Subsequent Plan Revisions	<i>Eight years after redesignation as an attainment area the state shall submit to EPA an additional revision of the applicable SIP for maintaining the NAAQS for 10 years after the expiration of the first 10-year maintenance period.</i>	ADEQ commits to submit an additional SIP revision, eight years after redesignation of the nonattainment area to attainment in order to demonstrate maintenance of the PM ₁₀ NAAQS for an additional 10-year period.	No additional location in document.
§ 175A(c) – Nonattainment Requirements Applicable Pending Plan Approval	<i>Until the maintenance plan is approved and the area is redesignated to attainment, the requirements of CAA title I, part D, Plan Requirements for Nonattainment Areas, shall continue in force and effect with respect to the area.</i>	ADEQ and PDEQ commit to continue to implement all required provisions as necessary.	No additional location in document.
§ 175A(d) – Contingency Provisions	<i>Each plan revision shall contain contingency provisions to assure that the state will promptly correct any violation of the standard which occurs after the redesignation of the area as an attainment area. Such provisions shall include a requirement that the State will implement all measures which were contained in the state implementation plan for the area before redesignation of the area as an attainment area.</i>	A contingency plan is included in Section 6.5 below.	Section 6.5

Table 1-8 lists CAA requirements for transportation and general conformity, programs applicable in both nonattainment and maintenance areas.

Table 1-8 CAA Requirements for Transportation and General Conformity

CAA Citation	Requirement	Action to Meet Requirement	Location in Document
§ 176(c) – Transportation Conformity	“Transportation conformity is required by the Clean Air Act section 176(c) (42 U.S.C. 7506(c)) to ensure that federal funding and approval are given to highway and transit projects that are consistent with ("conform to") the air quality goals established by a state air quality implementation plan (SIP).” ²²	Discussion of state conformity rules is included in Section 5.2.1.10. Evaluation of on-road mobile sources for regional emissions analyses purposes is included in Chapter 7.	Section 5.2.1.10 and Chapter 7
§ 176(c) – General Conformity	Similar to Transportation Conformity, which applies to highways and mass transit projects, General Conformity is applicable to all other federally supported activities to ensure that the actions taken by federal agencies in nonattainment and maintenance areas do not interfere with a state’s plans to meet national air quality standards.	General Conformity for the Ajo planning area must be addressed to ensure PM ₁₀ emissions from any federal actions or plans do not exceed the rates outlined in 40 CFR 93.153(b). ²³ Criteria for making determinations and provisions for general conformity are located in Arizona Administrative Code R18-2-1438. ADEQ and Pima County commit to review and comment, as appropriate, on any federal agency draft general conformity determination it receives pursuant to 40 CFR 93.155 for activities planned in this air quality planning area. Discussion of state conformity rules is included in Section 5.2.1.10.	See also Section 5.2.1.10

²² Source: *General Information for Transportation Conformity*, <https://www.epa.gov/state-and-local-transportation/general-information-transportation-and-conformity> (July 19, 2017).

²³ See 58 FR 63253, November 30, 1993.

1.7.2 EPA Guidance

Guidance utilized in the preparation of this plan include the following documents.

- *PM₁₀ SIP Development Guideline*, U.S. EPA, June 1987 (Publication No. EPA-450/2-86-001)
- *Procedures for Processing Requests to Redesignate Areas to Attainment*, Calcagni, J., Memorandum, U.S. EPA, September 4, 1992
- *Review of State Implementation Plans and Revisions for Enforceability and Legal Sufficiency*, Potter, J. C., Adams, T. L., Blake, F. S., Memorandum, U.S. EPA, September 23, 1987
- *Review of State Implementation Plans and Revisions for Enforceability and Legal Sufficiency*, Alushin, M. S., Eckert, A. W., Seitz, J. S., Memorandum, U.S. EPA, September 23, 1987
- *Adequacy Review and Conformity Checklist*, U.S. EPA Online SIP Processing Manual, June 1, 2016

1.8 Intergovernmental Participation/Consultation; Stakeholder Process

Federal law requires consultation and participation by local political subdivisions and federal land managers having authority over land to which the plan applies.²⁴ The SIP must identify and define the responsibilities of each organization that will participate in developing, implementing, and enforcing the plan. The plan must also include any related agreements or memoranda of understanding among the organizations.²⁵ Additional consultation procedures are required when transportation conformity budgets are established in the submitted plan.²⁶

ADEQ works with its partners and the regulated community to analyze emissions and develop control strategies in order to achieve attainment of the NAAQS. Participation is encouraged and technical advice sought through meetings and discussion with governmental departments and agencies, municipalities, members of the regulated community, and other interested parties; and through the public comment process for SIP revisions and rulemakings.

The following tables list the names and roles of governmental entities, the regulated community, and other interested parties participating in the development of this plan.

Table 1-9 Governmental Entities

Name	Role
Arizona Department of Environmental Quality (ADEQ)	Develop state implementation plan and emissions inventories. Analyze and participate in developing appropriate control strategies for the SIP. Original

²⁴ See CAA §§ 110(a)(2)(J), 110(a)(2)(M), and 121.

²⁵ See 40 CFR 51.240 and 51.241. See also *Memorandum of Agreement among the Arizona Department of Environmental Quality, Arizona Department of Transportation, Pima County Department of Environmental Quality, and Pima Association of Governments*, August 2000.

²⁶ See 40 CFR 93. See also Chapter 7.

Name	Role
	jurisdiction including permits for certain sources including smelting of metal ores. ²⁷
Pima County Department of Environmental Quality (PDEQ)	Consultation/participation in SIP development. Provide technological information for emissions inventories and any associated control measure analysis. Control measure development (rules) and implementation. Primary permitting authority in Pima County. ²⁸
Pima County and Other Departments	Consultation/participation in SIP development. Provide technological and economic information for emissions inventory development and any associated control measure analysis. ²⁹
Pima Association of Governments (PAG)	Consultation/participation in SIP development. Provide technological and economic information for emissions inventory development and any associated control measure analysis. Consultation on transportation related issues.
Arizona Department of Transportation (ADOT)	Provide technological information for emissions inventory development (e.g., MOVES data, vehicle miles traveled (VMT) data, construction information, etc.). Consultation on transportation related issues.
EPA Region 9	Participate in an advisory capacity throughout the SIP development process including review of the SIP Development Plan, Inventory Preparation Plan (IPP), and Technical Protocol; review and act on the SIP submitted by ADEQ.
Tohono O’odham Nation	Consultation/notification regarding control measure and SIP development.

Table 1-10 Other Stakeholders

Name	Role
Freeport McMoRan Inc. (FMI)	Owner of historic copper mining and smelting operations. Participate in and provide technological and economic information for the control measure analysis and implementation.
Members of the Public	Review and comment on proposed control strategy and plan.

²⁷ The division of jurisdiction between ADEQ and county air pollution control agencies in Arizona is governed by A.R.S. § 49-402(A) and (B). For more information regarding ADEQ and county jurisdiction for the nonattainment NSR and PSD programs see ADEQ’s *State Implementation Plan Revision, New Source Review, Supplemental Information, July 2014* (submitted to EPA on July 2, 2014).

²⁸ *Ibid.*

²⁹ See also *Ajo Nonattainment Area Inventory Preparation Plan*, October 5, 2017.

2 Attainment of the Standard – CAA § 107(d)(3)(E)(i)

“The State must show that the area is attaining the applicable NAAQS.”³⁰

2.1 Description of the Ambient PM₁₀ Monitoring Network

ADEQ operates an air quality monitor at the Arizona Department of Transportation maintenance yard (see Figure 1-1). The location was selected in an effort to monitor particulate matter emissions impacts from the now dismantled copper smelter and mine tailings. An automated monitor for recording continuous PM₁₀ (Thermo TEOM 1400AB, Federal Equivalent Method EQPM-1090-079) was installed at the site in 2009, replacing a filter based sampler (R&P Partisol 2000 H, Federal Reference Method RFPS-1298-126) that operated on a one in six-day schedule. The TEOM monitor was replaced by a Met One BAM 1020 (FEM EQPM-0798-122) instrument in April 2015. ADEQ also operates instrumentation to collect temperature, humidity, and wind data at this site.

The Ajo ambient air monitoring station is operated according to the requirements of 40 CFR Part 58. Collected data are quality assured and reported to EPA’s Air Quality System (AQS) for comparison to the NAAQS.

2.2 Ambient PM₁₀ Data Trends

EPA defines an “exceedance” as a discrete event, where a measured value at a monitor is higher than the level of the standard. The PM₁₀ standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. The number of expected exceedances at a site, also known as the design value, is determined by recording the actual number of exceedances in each calendar year and then averaging them over the most recent 3 year period.³¹

All monitored exceedances must be included when calculating design values for comparison to the NAAQS unless the state or local agency can show that the exceedances are due to invalid data (e.g., monitor malfunction, etc.) or due to an exceptional/natural event (e.g., regional high wind event).

On February 8, 2006, EPA determined that the Ajo area had attained the PM₁₀ NAAQS based on data for the period 2002-2004.³² Recent exceedances of the air quality standard are discussed in Section 2.2.1 below.

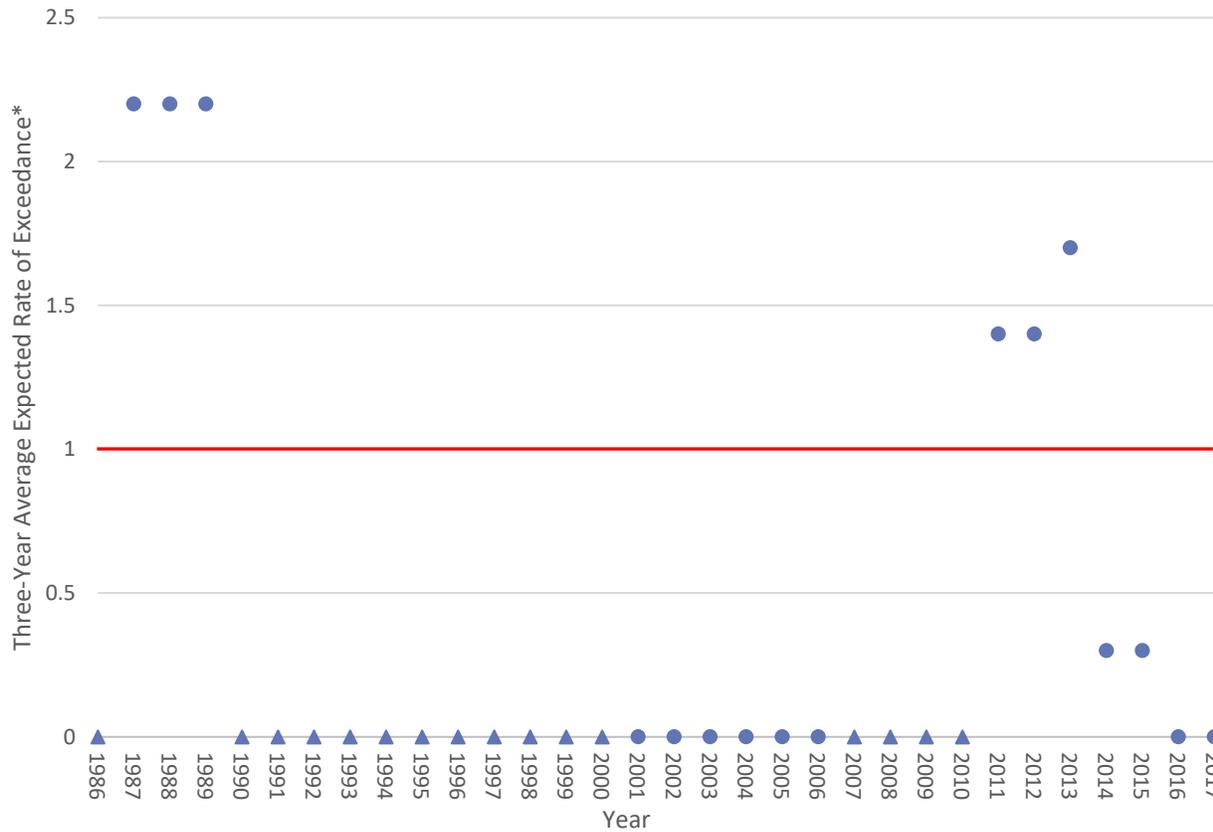
Figure 2-1 presents the calculated design values for years 1986 through 2017.

³⁰ See *Procedures for Processing Requests to Redesignate Areas to Attainment*, Calcagni, J., Memorandum, U.S. EPA, September 4, 1992.

³¹ The number of exceedances in a calendar year is an estimated value for non-continuous monitors.

³² See 71 FR 6352, February 8, 2006.

Figure 2-1 Ajo PM₁₀ Design Values 1986-2017



Source: EPA’s Air Quality System, AMP480 Preliminary Design Value Reports, dated May 3, 2016, March 22, 2017, and March 2, 2018.

* Although there were no recorded exceedances for years 1986, 1990-2000, and 2007-2010, and the calculated design values equaled 0, the AQS AMP480 reports indicate these data may not be valid for compliance purposes until additional analyses are performed. As explained in the reports, the certifying agency and/or EPA has determined that questions remain regarding the quality of these data due to data completeness, quality assurance procedures, or other issues. The design values for these years are represented by a triangle marker (Δ) in Figure 2-1. The red line indicates the PM₁₀ NAAQS.

2.2.1 Nature of Exceedances

The Ajo nonattainment area has not exceeded the PM₁₀ NAAQS for 26 of the last 28 years. In the period 1990 through 2017 there were five exceedances at the Ajo ambient monitor; four in 2011 and one in 2013. No exceedances have been recorded following the shutdown of nearby emissions sources and completion of stabilization work in 2015 (see Sections 4.1, Sources of PM₁₀, and 4.4, Improvement in Air Quality).

An evaluation of meteorological data indicates that the exceedances in 2011 and 2013 are likely associated with blowing dust generated from thunderstorm outflow or regional high wind events. Table 2-1 lists the exceedance dates and describes the meteorological patterns for those days. The nature of these events is more fully described in Appendix A, Section A4 and Subsection A4.3.

Table 2-1 Ajo Exceedance Days 1990-2017

Date	Local/Regional Meteorology*
June 29, 2011	Blowing dust due to regional high wind event. A low-pressure system/trough tracked through the region passing by to the north. Strongest impacts occurred before frontal passage with gusty winds out of the southwest. Maximum wind speed 27.72 miles per hour (mph).
August 18, 2011	Blowing dust likely generated from nearby thunderstorm outflow. Wind southerly. Maximum wind speed 32.84 mph.
August 26, 2011	Blowing dust likely generated from nearby thunderstorm outflow. Wind southwesterly. Maximum wind speed 28.23 mph.
August 27, 2011	Blowing dust likely generated from nearby thunderstorm outflow. Wind southwesterly. Maximum wind speed 46.17 mph.
April 8, 2013	Blowing dust due to regional high wind event. A low-pressure system/trough tracked through the region passing by to the north. Strongest impacts occurred before frontal passage with gusty winds out of the south and southwest. Maximum wind speed 44.58 mph.

* Wind data were obtained from ADEQ meteorological instrumentation at the Ajo monitoring site.

2.3 24-Hour PM₁₀ NAAQS Compliance

Based on complete quality-assured data, the Ajo planning area met the PM₁₀ NAAQS for the period 2014-2016. Table 2-2 presents the annual expected exceedance rates, maximum 24-hour concentrations, and 2016 design value for the Ajo monitoring site.

Table 2-2 PM₁₀ Compliance Summary – 2014-2016

AQS ID	2014		2015		2016		Three-year Average Expected Rate of Exceedance
	Maximum 24-hr Avg.	Expected Exceed.	Maximum 24-hr Avg.	Expected Exceed.	Maximum 24-hr Avg.	Expected Exceed.	
04-019-0001	134	0	67	0	141	0	0

The Ajo planning area is also currently meeting the PM₁₀ NAAQS based on data for the period 2015-2017.³³ Table 2-3 presents the annual expected exceedance rates, maximum 24-hour concentrations, and 2017 design value.

³³ ADEQ certified 2017 data in AQS on April 27, 2018.

Table 2-3 PM₁₀ Compliance Summary – 2015-2017

AQS ID	2015		2016		2017		Three-year Average Expected Rate of Exceedance
	Maximum 24-hr Avg.	Expected Exceed.	Maximum 24-hr Avg.	Expected Exceed.	Maximum 24-hr Avg.	Expected Exceed.	
04-019-0001	67	0	141	0	109	0	0

3 Fully Approved Implementation Plan – CAA § 107(d)(3)(E)(ii)

“The SIP for the area must be fully approved under CAA section 110(k), and must satisfy all requirements that apply to the area.” “An area cannot be redesignated if a required element of its plan is the subject of a disapproval; a finding of failure to submit or to implement the SIP; or -partial, conditional, or limited approval.” “... approval action on SIP elements and the redesignation request may occur simultaneously.”³⁴

PM₁₀ Nonattainment Area

Consistent with Clean Air Act requirements, the state previously submitted the following plans applicable to the Ajo PM₁₀ planning area.

- *PM₁₀ Committal State Implementation Plan, Ajo Group II Area, December 28, 1988*
- *Final State Implementation Plan for the Ajo PM₁₀ Nonattainment Area, November 15, 1991*
- *1987 PM₁₀ Infrastructure State Implementation Plan, June 30, 2017*

The June 30, 2017, plan was submitted to address certain basic elements or the "infrastructure" of state and local air quality management programs under CAA Sections 110(a)(2)(A) through (M). According to EPA policy, only those portions of the infrastructure SIP linked to the Ajo planning area's designation and classification are applicable requirements for purposes of redesignation.³⁵ Infrastructure plan elements and Arizona's demonstrations to meet plan requirements are more fully described in Chapter 5.

The 1988 and later the 1991 plans were submitted to meet CAA nonattainment plan requirements for the Ajo PM₁₀ planning area under CAA Title I, Part D. A clean data finding in 2006, however, suspended many nonattainment plan requirements (see Sections 1.5 and 5.2). Additionally, the current redesignation request and maintenance plan supersedes the 1988 and 1991 submissions.

In summary, this SIP revision includes demonstrations that all applicable Clean Air Act requirements for the PM₁₀ nonattainment area have been met.

TSP Designation

Prior to promulgation of the PM₁₀ NAAQS the Ajo area (one township) was designated as not meeting the primary total suspended particulates air quality standards.³⁶ EPA revised the particulate matter NAAQS in 1987 by replacing TSP with a new indicator for particulate matter, PM₁₀ (see Section 1.4). The Ajo area was subsequently also designated nonattainment for PM₁₀ following the CAA amendments of 1990. Because the TSP standards were replaced with the new PM₁₀ NAAQS, ADEQ is seeking to update the status of the Ajo area and requests that EPA remove its TSP nonattainment designation.

When establishing the PM₁₀ NAAQS in 1987, EPA indicated that it “would consider deletion of TSP area designations once EPA had reviewed and approved revised SIPs that include control strategies for the

³⁴ See *Procedures for Processing Requests to Redesignate Areas to Attainment*, Calcagni, J., Memorandum, U.S. EPA, September 4, 1992.

³⁵ See 73 FR 22312, April 25, 2008.

³⁶ See 40 CFR 81.303.

PM₁₀ NAAQS and once EPA had promulgated PM₁₀ increments for the prevention of significant deterioration (PSD) program.”³⁷

In its 2014 action to redesignate Las Vegas Valley, Nevada, to attainment for the PM₁₀ standard, EPA stated “that the relevant considerations for evaluating whether the necessity of retaining the TSP area designations depend upon the status of a given area with respect to TSP and PM₁₀.”³⁸ Further, “For areas that are nonattainment for TSP but attainment for PM₁₀, we generally find that the TSP designations are no longer necessary and can be deleted when EPA (1) approves a State’s revised PSD program containing the PM₁₀ increments, (2) promulgates the PM₁₀ increments into a State’s SIP where the State chooses not to adopt the increments on their own, or (3) approves a State’s request for delegation of PSD responsibility under 40 CFR 52.21(u).”³⁹

“For areas that are nonattainment for TSP and nonattainment for PM₁₀, an additional consideration is whether deletion of the TSP designations would automatically relax any emissions limitations, control measures or programs approved into the SIP. If such a relaxation would occur automatically with deletion of the TSP area designations, then we will not delete the designations until we are satisfied that the resulting SIP relaxation would not interfere with any applicable requirement concerning attainment, reasonable further progress (RFP), or maintenance of the NAAQS or any other requirement of the Clean Air Act in the affected areas. See section 110(l) of the Act.”⁴⁰

EPA also commented that the considerations for both types of areas described above (nonattainment for TSP/attainment for PM₁₀, nonattainment for TSP/nonattainment for PM₁₀) are relevant for areas that are currently nonattainment for PM₁₀, but for which the state has requested redesignation to attainment for PM₁₀.

As background, Arizona Revised Statutes, Title 49, "The Environment," divides responsibility for meeting the requirements of the CAA among the state and local agencies. County agencies have original jurisdiction for the issuance, administration, and enforcement of permits.⁴¹ State law also provides direct county authority to adopt and enforce programs, rules, and ordinances for the prevention, control, and abatement of air pollution.⁴² ADEQ, however, has original jurisdiction for mobile and certain stationary sources including smelting of metal ore, coal-fired electrical generating stations, and portable sources but may delegate jurisdiction to a local agency as allowed under state law.⁴³

ADEQ has an approved PSD program, except for greenhouse gases (GHG), under sections 160 through 165 of the CAA.⁴⁴ The Pima County Department of Environmental Quality currently implements the Federal PSD program in 40 CFR 52.21 for all regulated new source review (NSR) pollutants pursuant to a delegation agreement. In addition, ADEQ is not aware of any relevant ADEQ or Pima County emissions limitations, control measures or other programs that are contingent upon continuation of the TSP nonattainment designation or would cause a relaxation of control strategies in the area if the TSP

³⁷ See 52 FR 24672, at 24682, July 1, 1987, and 79 FR 42258, July 21, 2014.

³⁸ See 79 FR 42258, at 42273, July 21, 2014.

³⁹ See 58 FR 31622, at 31635, June 3, 1993.

⁴⁰ See 79 FR 42273, July 21, 2014.

⁴¹ A.R.S. § 49-402.

⁴² A.R.S. Title 49, Chapter 3, Article 3.

⁴³ A.R.S. §§ 49-107 and 402.

⁴⁴ ADEQ is currently administering the requirements for GHGs under a delegation agreement with EPA.

designation were deleted. Therefore, ADEQ requests that EPA delete the total suspended particulates nonattainment designation for the Ajo area.

Particulate Matter FIP

In 1972, prior to establishment of the PM₁₀ NAAQS, EPA promulgated a particulate matter Federal Implementation Plan (FIP) for Pima County (and other counties) at 40 CFR 52.126 *Control strategy and regulations: Particulate matter*. The FIP replaced state submitted rules for the regulation of particulate matter emissions from stationary process sources including *Regulation 7-1-3.6 of the Arizona Rules and Regulations for Air Pollution Control* and *Rule 2(B) of Regulation II of the Rules and Regulations of the Pima County Air Pollution Control District (Phoenix-Tucson Intrastate Region)*.⁴⁵ In its disapproval of the submitted rules EPA stated that the “Arizona implementation plan did not meet the requirements of 40 CFR 51.13 and 51.22 since it did not provide for the attainment and maintenance of national standards for particulate matter in the Phoenix-Tucson Air Quality Control Region (AQCR).”⁴⁶

Within the Phoenix-Tucson AQCR, Pima County subsequently adopted new regulations for process industries under its jurisdiction. The new Pima County regulations, which incorporated the federal emissions rates, were submitted to EPA on June 14, 1974. EPA proposed approval of the rules on August 21, 1975.⁴⁷ Additionally, a review of emissions sources shows that no “process sources” under state or county jurisdiction currently operate within the Ajo PM₁₀ nonattainment area.⁴⁸

⁴⁵ See 37 FR 15094, 15096, July 27, 1972, and 38 FR 12704, May 14, 1973.

⁴⁶ See 37 FR 10842, May 31, 1972, and 40 FR 36577, 36578, August 21, 1975.

⁴⁷ See 40 FR 36577, 36578, August 21, 1975.

⁴⁸ If a state regulated source applies for a permit to operate in Pima County, A.R.S. § 49-402(D) requires the permit to include emissions standards adopted by the county if the standards are more stringent than state standards and if the county standards are identified as applicable to the permitted source (requirement applies to certain listed state sources). The division of jurisdiction between ADEQ and county air pollution control agencies in Arizona is governed by A.R.S. § 49-402(A) and (B). For more information regarding ADEQ and PDEQ jurisdiction for the nonattainment NSR and PSD programs see ADEQ’s *State Implementation Plan Revision, New Source Review, Supplemental Information, July 2014* (submitted to EPA on July 2, 2014).

4 Permanent and Enforceable Improvement in Air Quality – CAA § 107(d)(3)(E)(iii)

“The State must be able to reasonably attribute the improvement in air quality to emission reductions which are permanent and enforceable. Attainment resulting from temporary reductions in emission rates (e.g., reduced production or shutdown due to temporary adverse economic-conditions) or unusually favorable meteorology would not qualify as an air quality improvement due to permanent and enforceable emission reductions.”⁴⁹

4.1 Sources of PM₁₀

Primary Copper Smelter, Concentrator, and Mine

The Phelps Dodge Corporation copper mining, concentrating and smelting facilities, collectively known as the Phelps Dodge “New Cornelia Branch,” were the largest permitted stationary sources in the Ajo nonattainment area.⁵⁰ Mining and refining of copper ores began in the early 1900s. Fugitive dust originating from tailings impoundments contributed the largest share of anthropogenic PM₁₀ emissions in the nonattainment area.⁵¹

The Ajo mine ceased operation in 1984 and the smelter deactivated in April 1985. A resource reclamation and salvage program was initiated in January 1995 and completed in March 1996, effectively dismantling the smelter and copper ore concentrator structures at the facility.⁵² ADEQ terminated the facility’s permit in July 1996.⁵³

The drying surfaces of tailings piles can become friable, easily crumbled or reduced to powder, thereby contributing to windblown particulate emissions. To minimize windblown emissions from the inactive tailings impoundments, Phelps Dodge engaged Terra Contracting to cover (or cap) more than 1900 acres of the tailings with 2-4” diameter crushed rock between May 1990 and October 1991. To prevent disturbance, access to roads and service areas around and on the tailings continues to be restricted (i.e., property is posted and fenced).

This source area is located directly across Ajo Well Road from the ambient PM₁₀ monitor (see Figure 1).

⁴⁹ See *Procedures for Processing Requests to Redesignate Areas to Attainment*, Calcagni, J., Memorandum, U.S. EPA, September 4, 1992.

⁵⁰ The Ajo property is now owned by Freeport McMoRan Copper & Gold Inc., the successor to Phelps Dodge Corporation.

⁵¹ Tailings dams, or tailings impoundments, are earth-fill embankment dams used to store byproducts of mining operations after separating the mineral ore from other unused material. These areas are also sometimes referred to as tailings piles.

⁵² More information on the closure of this facility can be found in *Final, Ajo Sulfur Dioxide Nonattainment Area, State Implementation and Maintenance Plan*, May 2002, and *Final, Arizona State Implementation Plan Revision, Maintenance Plan for the Ajo Sulfur Dioxide Planning Area (1971 NAAQS)*, February 2013.

⁵³ See letter from Nancy Wrona, ADEQ, to John Zamar, Phelps Dodge Corporation, New Cornelia Branch, July 9, 1996.

Minerals Research & Recovery

Minerals Research & Recovery Inc. was a slag reprocessing facility adjacent to the Ajo tailings piles. MRRI utilized byproducts of the copper smelting process (slag) to make products such as abrasives and grinding materials, roofing granules, and asphalt fillers.⁵⁴ The facility operated in the Ajo area since the 1980s and was permitted by the Pima County Department of Environmental Quality.

Sources of process emissions and fugitive dust at the Ajo facility included three main production areas; raw stockpile and waste storage areas, a primary crushing and screening plant, and a secondary crushing and screening plant. In addition, there was an access road to nearby highway 85 and haul roads to the stockpile areas. Although measures to control particulate emissions were implemented at the facility, including a dust control plan, a number of notices of violation and opportunity to correct were issued by the permitting authority during its period of operation (see Section 4.4.1).

The operating area of this facility was located approximately a half mile south of the ambient PM₁₀ monitor (see Figure 1).

MRRI filed a notice of intent to terminate its air quality operating permit in October 2015.⁵⁵ Demolition of all facility structures was accomplished between July 1, 2015 and October 31, 2015. Pima County terminated the facility's permit in February 2016.⁵⁶

To reduce future windblown fugitive emissions, mitigation measures were implemented including application of a slag dust cap on selected process areas.⁵⁷ Stabilization of the worksite was completed by the end of 2015. To prevent further disturbance, access to roads and service areas at the former reprocessing facility are restricted (i.e., property is posted and fenced). No ambient exceedances of the PM₁₀ NAAQS have been recorded following completion of the stabilization project.

Other Sources

Additional emissions sources in the Ajo nonattainment area include paved and unpaved roads, construction, a landfill, and windblown dust from open areas. See Appendix A, *Ajo PM₁₀ Emission Inventory Technical Support Document*, for more information on emissions sources in the Ajo area.

⁵⁴ The smelting of copper ore concentrates is a process designed, through the use of heat and introduction of silica fluxes, to separate copper from iron, sulfur, and other impurities in the ore. In the smelting furnace, much of the sulfur is eliminated as gaseous emissions. The introduced fluxes bind with the iron and impurities to help form two molten layers at the bottom of the furnace. The lighter, top layer is a slag comprised predominantly of iron oxides and silicon oxides. The mostly copper bottom layer is called matte. The slag is skimmed from the top of the matte for disposal at a slag dump. The cooled slag can later be processed into abrasives or used in the construction industry.

⁵⁵ See *Notice of Intent to Terminate Air Quality Operating Permit, Number 3783*, Minerals Research & Recovery Inc., October 29, 2015.

⁵⁶ See letter from Rupesh Patel, Pima County Department of Environmental Quality, to Michael Vick, Minerals Research & Recovery Inc., February 9, 2016.

⁵⁷ Physical stabilization of the area included application of a slag dust cap (coarse copper smelter slag material) at a minimum depth of six inches, watered to promote settling of any fine material.

4.2 Emissions Control Measures and Enforceability

4.2.1 Tailings and Slag Storage Area Rule Summary

Application of control measures at the Ajo tailings impoundment and slag processing/storage areas were completed in 1991 and 2015, respectively (see above). To meet redesignation requirements, however, individual emissions reduction measures should be converted into a legally enforceable vehicle and submitted to EPA for inclusion into the Arizona SIP. When approved by EPA the new area specific rule, Pima County Code 17.16.125. *Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM₁₀ Planning Area*, will provide permanence and federal enforceability for those measures already implemented.⁵⁸

Under this fugitive dust rule, owners or operators are subject to implement and maintain required PM₁₀ control measures on applicable sources to meet visible emissions and stabilization requirements and ensure continued particulate matter emissions reductions in the Ajo PM₁₀ planning area. The inactive tailings impoundments must be controlled to 20 percent opacity for fugitive emissions on the property. For both the tailings and slag areas owners or operators must also install and maintain signs and physical barriers such as fencing to prevent trespass and re-disturbance on the property.

4.2.2 Planned Rule Implementation Schedule

The Pima County Department of Environmental Quality posted a Notice of Proposed Rulemaking for public review and comment on October 26, 2018. The rule was approved by the County Board of Supervisors on January 22, 2019, with an effective date of February 21, 2019. A copy of the proposed and final rule and other rulemaking and SIP revision documentation are included in Appendix C.

4.2.3 Rule Enforceability

Regulations or control measures should meet EPA's criteria regarding the enforceability of SIPs and SIP revisions.⁵⁹

4.2.3.1 Authority

Per A.R.S. § 49-479(A), the Pima County Board of Supervisors has specific authority, subject to procedural requirements, to adopt and implement rules to control the atmospheric release of air contaminants originating within Pima County territorial limits. The County may adopt rules that are more stringent than ADEQ's as long as certain conditions are met such as the rule is necessary to address a peculiar local condition and there is credible evidence that the rule is either: (1) necessary to prevent significant threat to public health or the environment and the rule is technically and economically feasible, or (2) the rule is required under federal statute or regulation. ADEQ has no similar tailings rule, therefore the measure is more stringent than ADEQ's rules. This rule, however, is federally required per CAA section 107(d)(3)(E)(iii), insofar as to ensure that ADEQ is able to submit a SIP on behalf of Pima County for the

⁵⁸ Various state and county rules that require PM₁₀ emissions control are already in place in Pima County, however, not all are approved into the SIP or specifically address Ajo area sources in a manner required for redesignation.

⁵⁹ See *Review of State Implementation Plans and Revisions for Enforceability and Legal Sufficiency*, Potter, J. C., Adams, T. L., Blake, F. S., Memorandum, U.S. EPA, September 23, 1987, and *Review of State Implementation Plans and Revisions for Enforceability and Legal Sufficiency*, Alushin, M. S., Eckert, A. W., Seitz, J. S., Memorandum, U.S. EPA, September 23, 1987.

Ajo moderate PM₁₀ nonattainment area, and that there are federally enforceable rules in place to control PM emissions for a significant source of fugitive dust.

Per A.R.S. § 49-473, the Board of Supervisors additionally has authority to authorize Pima County to carry out the necessary investigations, inspections, and enforcement of any rules adopted pursuant to prevailing statutory authority. Such authority includes those defining violations and processes for violation consequences, such as A.R.S. §§ 49-502, 510, 511, 513, and 514.

4.2.3.2 Rule Applicability

The rule applies to the owners or operators of the inactive mineral tailings impoundment and slag storage areas to reduce fugitive dust emissions from such sources located within the Ajo PM₁₀ planning area and activities upon such sources.

4.2.3.3 Exemptions or Additional Requirements

The 20 percent opacity standard does not apply during verified high wind events provided that the owner or operator has implemented and maintained prescribed control measures for the mineral tailings impoundment. High wind event is defined as an hourly average wind speed of 25 miles per hour or more or an instantaneous wind gust of 40 miles per hour or more as measured in the affected area by a listed meteorological monitoring station.

4.2.3.4 Alternative Practices

Alternative measures that are adequate to address applicable emissions control requirements in Pima County Code 17.16.125(C)(1)(e) and (C)(2)(b) must be approved by PDEQ and EPA Region 9.

4.2.3.5 Notice

The definitions and rule requirements are sufficiently clear so as to put the regulated community on notice. The applicability of the rule is limited to relatively few sources and ADEQ and Pima County have worked closely with industry representatives to ensure the rule is understandable and clear so that the regulated can comply with it.

4.2.3.6 Compliance Schedule

Per Pima County practice, the provisions of the rule took effect 30 days after adoption by the Pima County Board of Supervisors. The rule was approved by the Board of Supervisors on January 22, 2019, with an effective date of February 21, 2019. From that point on, the regulated community must comply with the rule.

4.2.3.7 Records

Any person subject to the rule shall compile and retain records that provide evidence of: control measure application; visible emission observations; inspections; EPA Reference Method 9 or ASTM D7520-16 certifications; installation, calibration, certification, operation, and maintenance of any meteorological equipment or meteorological monitoring station data used for purposes of identifying high wind events.

The following records related to Digital Camera Opacity Technique shall also be maintained: ASTM D7520-16 certification documentation, data sheets, and all raw unaltered JPEGs used for opacity and certification determination, recorded in a form suitable and readily available for expeditious inspection and review;

and standard operating procedures used to ensure that equipment is operated and maintained in accordance with manufacturer’s specifications per Section 8.1 of ASTM D7520-16.

All records required by the rule are required to be maintained by the owner or operator for a minimum of 5 years.

4.2.3.8 Test Methods and Compliance

Compliance is determined by inspection and records review. Failure by any person to comply with the requirements of the rule is a violation and such person is subject to Pima County’s authority to enforce, as listed above. In addition to recording compliance with rule provisions, the owner or operator is also required to report within 24 hours any visible emissions in excess of the opacity limit established by the rule. It is up to the owners/operators within the Ajo nonattainment area to demonstrate compliance with this rule.

As a practical matter, continued maintenance of stabilization measures in the Ajo PM₁₀ planning area is demonstrated through the required visible emission observations (EPA Reference Method 9 or ASTM D7520-16) to ensure opacity remains below 20% and access restriction to prevent re-disturbance of the area.

4.3 Emissions Reductions from Tailings and Slag Storage Area Rule

Emissions in the Ajo area have generally decreased over the past 25 years due mainly to the closure of significant stationary sources. The Ajo New Cornelia mine and smelter ceased operation in the mid-1980s. Capping of the tailings impoundments in 1991 led to a 90 percent reduction of windblown emissions from this source, which has continued through to the present day (see Table 4-1).

Table 4-1 Tailings Impoundment Emissions

Total Tailings Impoundment Emissions (tons per year)*							
Pre-Cap	1992	2011	2012	2013	2014	2015	2016
112.00	11.00	15.12	15.34	17.44	6.10	6.97	7.76

* Emissions estimates are based on windblown emissions.

In addition to the capping of the tailings impoundments, the closure and stabilization of the slag reprocessing facility (MRRI) in 2014/2015 provided additional emissions reductions in the area (see Table 4-2).

Table 4-2 Slag Area Emissions

Total Slag Processing/Storage Area Emissions (tons per year)						
Emissions Type	2011	2012	2013	2014	2015	2016
Activity-Based*	51.45	51.45	51.45	51.45	0	0
Windblown	5.45	5.53	6.29	2.20	2.51	0.20
Total	56.90	56.98	57.74	53.65	2.51	0.20

* Activity-based emissions are based on the permitted potential to emit (PTE) including fugitive emissions. Historically, as reported, actual operational emissions averaged approximately 18 tons per year (based on 2005-2007 data).

Overall, closure and capping of the Ajo tailings impoundment and the slag reprocessing areas provided potential emissions reductions of more than 160 tons per year (tpy) and actual emissions reductions of approximately 127 tpy.⁶⁰ See the technical support documentation in Appendix A, Section A6, for more information on these sources.

4.4 Improvement in Air Quality

4.4.1 Long Term Trends

The following timeline provides a list of selected events related to (previously) permitted source operations in the Ajo area (tailings impoundments and slag reprocessing facility). Documentation of permit noncompliance, anecdotal reports of excess emissions from the community, facility closures, and stabilization projects provide insight into source emissions changes that likely impacted ambient air quality over the last several decades.

- **1984**
 - Ajo copper mine ended operations.
- **1986-1991**
 - Four Notice of Violations (**NOV**) issued for MRRI permit violations related to dust emissions.

⁶⁰ Actual emissions reductions are estimated as follows. Reduction in windblown emissions from the tailings impoundments is calculated as the difference between pre-1991 emissions (pre-capping) of 112 tpy and emissions for 2016 of 7.76 tpy (112 – 7.76 = 104.24 tpy reduction). Emissions reduction estimates for the slag area assumes average windblown emissions of 4.87 tpy (based on 2011-2014 data) and average activity based emissions of 18 tpy (based on available 2005-2007 data). Reductions in windblown and activity-based emissions from the slag area are based on the difference between pre-2015 emissions (pre-capping) of 22.87 tpy (4.87+18) and estimated emissions for 2016 of 0.20 tpy (22.87 – 0.20 = 22.67 tpy reduction). Emissions reductions for both sources are estimated at 126.91 tpy. See also Appendix A, Section A6.

- **1991**
 - 1900 acres of mine tailings impoundments capped with crushed rock (May 1990 – October 1991).
- **1999**
 - **NOV** (11/10/1999) resulting in consent decree/settlement agreement for MRRRI baghouse/emissions violations. MRRRI paid a penalty of \$5,500 for the violations.
- **2000**
 - Public meeting (4/6/2000) hosted by Western Pima County Community Council. Discussion topics included Ajo air quality, particulate emissions, and MRRRI permit compliance.
- **2000**
 - **NOV** (5/30/2000) resulting in consent decree/settlement agreement for MRRRI excessive particle/dust emissions from multiple emissions units at facility. MRRRI paid a penalty of \$12,000 and an additional \$13,819.59 in Supplemental Environmental Project (SEP) for the violations.
- **2005**
 - Ajo residents meet with MRRRI (August 2005) to express concerns about dust emissions.
- **2005**
 - Opportunity to Correct (**OTC**) issued to MRRRI (10/7/2005) for failure to apply dust mitigation measures.
- **2008**
 - **OTC** issued to MRRRI (7/21/2008) for failure to inspect operations for fugitive emissions.
- **2010**
 - **OTC** issued to MRRRI (August 2010) for failure to notify permitting authority of contracting third party to perform primary crushing and screening operations.
- **2010**
 - MRRRI reportedly takes “Rainbird” sprinkler system (used to control dust) offline at waste stockpile haul road and raw stockpile areas (12/2/2010) resulting in potential changes to fugitive dust emissions which are subject to monitoring, recordkeeping, and reporting permit requirements.
- **2011**
 - Four exceedances of the PM₁₀ NAAQS recorded at the Ajo ambient monitor (6/29/2011, 8/18/2011, 8/26/2011, and 8/27/2011).

- **2012**
 - Water tanks, booster pump, and pressure gauge reportedly taken offline at MRRRI facility (7/10/2012) due to inoperability of “Rainbird” sprinkler system and location of material pile left by contracted primary crushing and screening operations.
- **2013**
 - Excessive dust complaints regarding MRRRI operations received at Ajo public hearing (2/7/2013). One commenter reported “very fine,” black dust kicked up by the wind impacting parts of the community.
- **2013**
 - Permitting authority responded (February 2013) to complaint of excessive dust from MRRRI.
- **2013**
 - One exceedance of the PM₁₀ NAAQS recorded at the Ajo ambient monitor (4/8/2013).
- **2013**
 - Dust complaint filed with permitting authority regarding MRRRI (6/26/2013).
- **2013**
 - **OTC** issued to MRRRI (8/19/2013) following full compliance evaluation and response to dust complaint.
 - Failure to utilize a “Rainbird” type water system to control dust on the waste stockpile haul road and raw stockpile area. Facility indicated it utilized a water truck and hoses as a replacement system.
 - Failure to apply for and receive a minor permit revision for discontinuation of “Rainbird” water distribution system.
 - Some times on Air Quality Checklist documentation not completed for “Applied water to all areas to adequately prevent or minimize visible emissions” for several days prior to (6/26/2013) dust complaint.
- **2014**
 - MRRRI dust complaint received with accompanying photographs and video (2/19/2014).
- **2014**
 - **NOV** issued to MRRRI (3/25/2014) following complaint investigation.
 - Failure to take reasonable precautions to control the generation of airborne particulate matter in the secondary crushing and screening plant area resulting in significant amounts of airborne dust and the diffusion of visible emissions beyond the property boundary line (facility allowed operations to continue during repair of baghouse blower system).

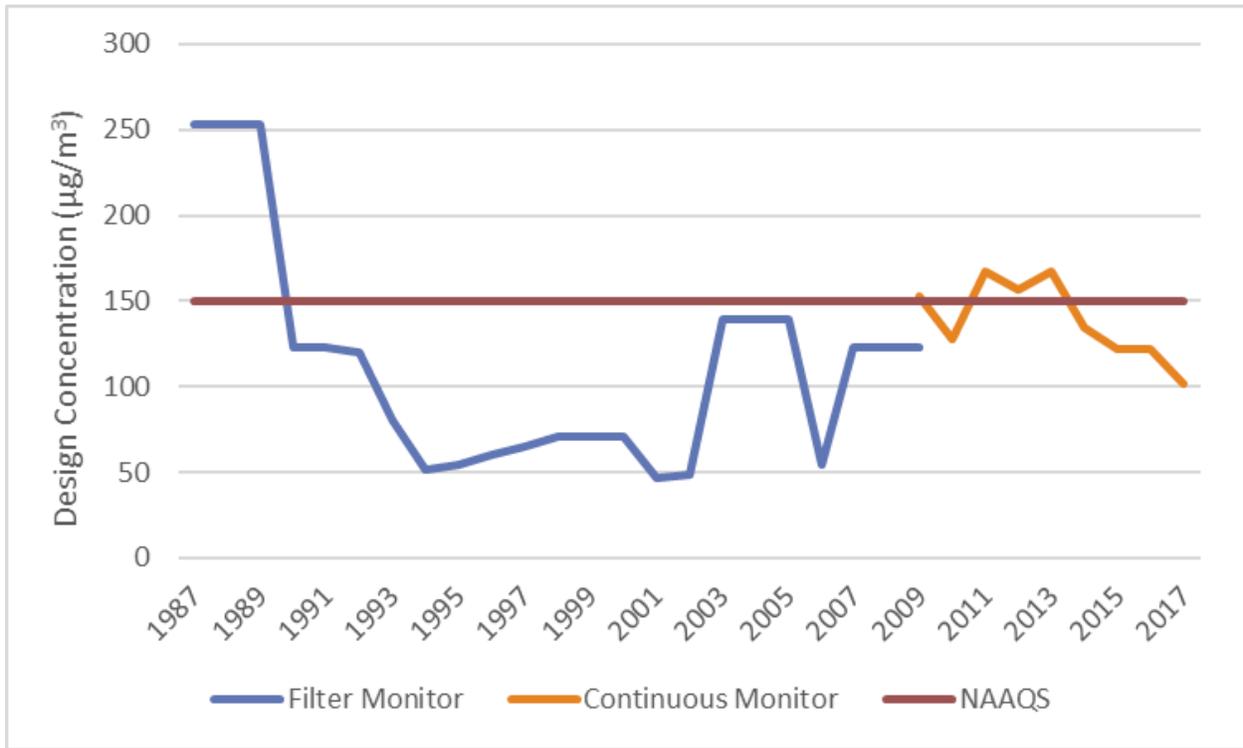
- Failure to take reasonably necessary precautions to control the generation of airborne particulate matter from a fugitive source south of the secondary plant resulting in significant amounts of airborne dust and the diffusion of visible emissions beyond the property boundary line.
 - Failure to maintain the previous water distribution system, including three 20,000 gallon tanks and failure to maintain the previous watering capacity (water truck and sprinkler capacity) to enable applications of adequate amounts of water to control windblown dust, from haul roads, earthmoving, and other activities or to stabilize storage piles and roadways to minimize visible emissions during high wind conditions.
- **2015**
 - Demolition of all MRRI facility structures completed (7/1/2015 – 10/31/2015). Stabilization of worksite completed (December 2015).
 - **2016**
 - Permit termination letter issued to MRRI (2/9/2016).

Figure 4-1 below presents Ajo area design concentrations from 1987 through 2017.⁶¹ A comparison of events in the timeline above with the design concentrations in Figure 4-1 shows that installation of the cap on the Ajo mine tailings impoundments in 1990/1991 coincides with an approximately 50 percent decrease in ambient PM₁₀ design concentrations. Concentrations remained below the level of the NAAQS from 1990 through 2010. Discontinuation of the “Rainbird” sprinkler system used to control dust emissions from the waste stockpile haul road and raw stockpile areas at the MRRI slag reprocessing facility in December 2010 preceded four exceedances of the PM₁₀ NAAQS at the Ajo ambient monitor in 2011 and an overall increase in design concentration values (Figure 4-1).

A March 2014 NOV found that MRRI failed to maintain its water distribution system and watering capacity to enable applications of adequate amounts of water to control windblown dust during high wind conditions. Ongoing compliance challenges at MRRI and documented dust complaints from the community indicate that emissions from this facility likely impacted air quality in the Ajo area.

⁶¹ The design concentration is an estimated value for a particular monitoring or receptor site that is used to determine the adequacy of an area’s control strategy. The design concentration value takes into account the *form* of the PM₁₀ NAAQS (e.g., not to be exceeded more than once per year on average) but is compared to the *level* of the NAAQS to determine adequacy. Values at or below 150 µg/m³ are needed to assure attainment. See *PM₁₀ SIP Development Guideline*, U.S. EPA, June 1987 (Publication No. EPA-450/2-86-001), Chapter 6, for information on determining design concentrations. A design value, which differs from the design concentration, is a statistic that describes the air quality status of a given monitoring location relative to the *form* of the NAAQS and determines whether the area is attaining the NAAQS (see Sections 1.4 and 2.2).

Figure 4-1 Historic Design Concentrations⁶²



4.4.2 Recent Improvements in Air Quality

No ambient exceedances or violations of the 24-hour PM₁₀ standard have occurred in the Ajo area since the closure and stabilization of the MRRRI work area in 2014/2015 (see also Figure 2-1). Additionally, daily and monthly average concentrations have been declining over the past several years. These recent trends are illustrated in Figures 4-2 and 4-3 below. See Appendix A, Section A4, for more information on ambient PM₁₀ trends.

⁶² See also Appendix A, Ajo PM₁₀ Emission Inventory Technical Support Document, Section A6.

Figure 4-2 Daily Average PM₁₀ Concentrations – 2011-2017

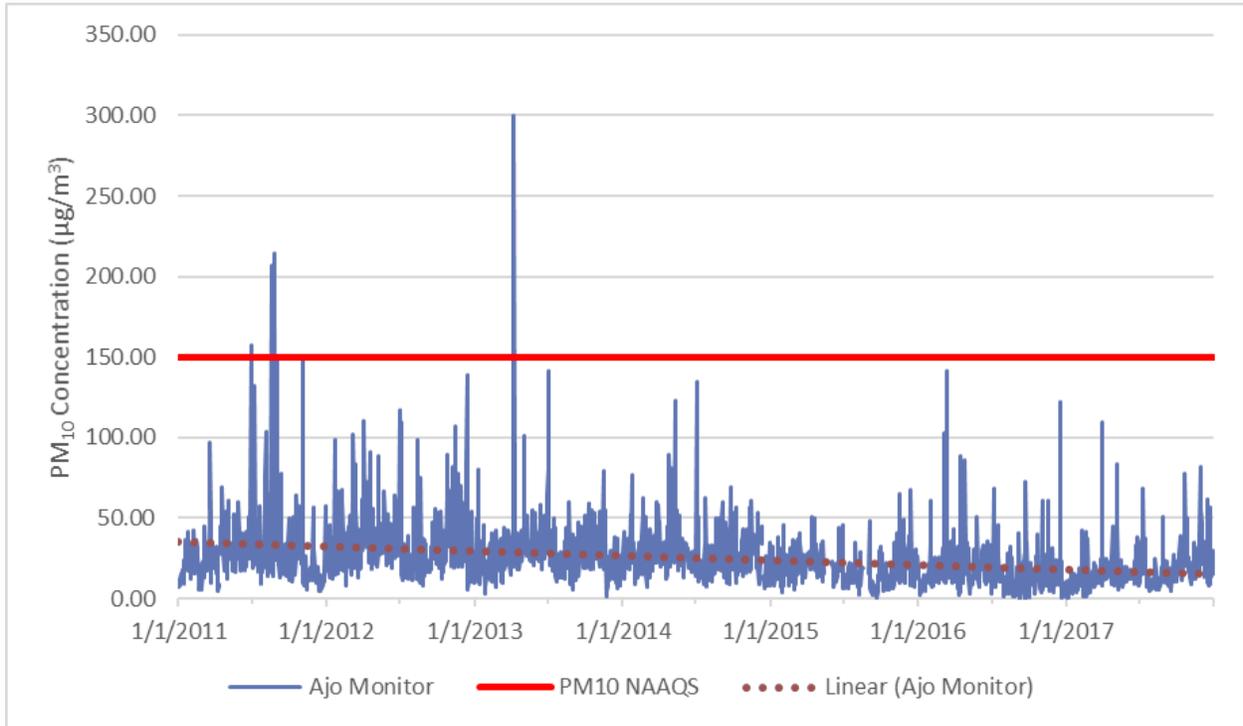
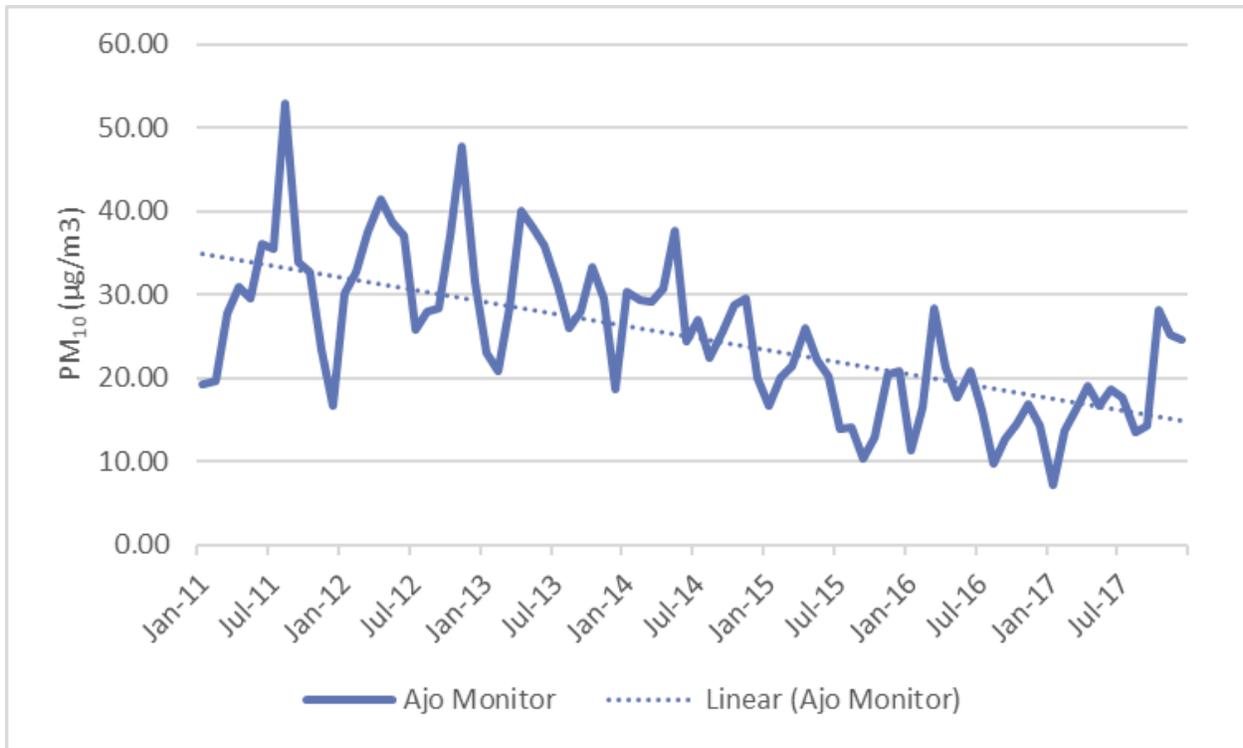


Figure 4-3 Monthly Average PM₁₀ Concentrations – 2011-2017



5 Section 110 and Part D Requirements – CAA § 107(d)(3)(E)(v)

“For the purposes of redesignation, a State must meet all requirements of section 110 and Part D that were applicable prior to submittal of the complete redesignation request.”⁶³

5.1 CAA Section 110 – Implementation Plans

Infrastructure SIP

Clean Air Act Section 110(a)(1) requires states to submit SIPs within three years following the promulgation of new or revised NAAQS to provide for implementation, maintenance, and enforcement of such standards. Each of these SIPs must address certain basic elements or the "infrastructure" of its air quality management programs under CAA Section 110(a)(2)(A) through (M). These elements include, but are not limited to, provisions for establishment and operation of ambient monitoring, public and local agency participation in air quality planning, and operation of permitting programs. The provisions of Section 110(a)(2) are primarily general program requirements applicable to all areas of the state.⁶⁴ The timing of SIP submittals for control measures, attainment demonstrations, and other air quality planning obligations specific to nonattainment areas are subject to the provisions of CAA, Title I, Part D – “Plan Requirements for Nonattainment Areas” (see Section 5.2 below).

According to EPA policy, only those Section 110 elements that are linked with a particular nonattainment area’s designation and classification are applicable requirements for purposes of redesignation. As an example, “CAA section 110(a)(2)(D) requires that SIPs contain certain measures to prevent sources in a state from significantly contributing to air quality problems in another state. However, the section 110(a)(2)(D) requirements for a state are not linked with a particular nonattainment area’s designation and classification in that state.”⁶⁵ As such, the “interstate transport” of emissions requirement is not a relevant measure to evaluate in a redesignation request.

On June 30, 2017, Arizona submitted a SIP revision to demonstrate that state and local air quality management programs meet the basic program elements required under CAA sections 110(a)(1) and (2) for implementing the 24-hour PM₁₀ NAAQS. The plan is under review by EPA.

Nonattainment New Source Review/Prevention of Significant Deterioration

The June 30, 2017, submission included a description of state and local source permitting programs. Clean Air Act 110(a)(2)(C) requires provisions for the implementation of both Part C Prevention of Significant Deterioration (PSD) in attainment (and maintenance) areas and Part D nonattainment New Source Review (NNSR) in nonattainment areas.⁶⁶

⁶³ See *Procedures for Processing Requests to Redesignate Areas to Attainment*, Calcagni, J., Memorandum, U.S. EPA, September 4, 1992.

⁶⁴ The requirements of CAA 110(a)(2) apply to attainment, nonattainment, and unclassifiable areas.

⁶⁵ See 73 FR 22312, April 25, 2008.

⁶⁶ The term New Source Review or NSR is sometimes used to refer to both the nonattainment NSR and PSD permitting programs.

Arizona Revised Statutes Title 49, Chapter 3, Articles 1, 2, and 3 establish ADEQ and local agency authority for preconstruction review and permitting.⁶⁷ Under the air permits program, sources that emit regulated pollutants are required to obtain a permit before constructing, changing, replacing, or operating any equipment or process which may cause air pollution. This includes equipment designed to reduce air pollution. Permits are also required if an existing facility that causes air pollution transfers ownership, relocates, or otherwise changes operations.

Per the authority noted above, new sources and modifications to existing sources in Arizona are subject to state requirements for preconstruction review and permitting under Arizona Administrative Code (AAC), Title 18, Chapter 2, Articles 2, 3, 4, and 5 or relevant county rules. All new major sources and major modifications to existing major sources in Arizona are also subject to the nonattainment NSR provisions of these rules or PSD for attainment areas. Sources under Pima County jurisdiction are subject to the permitting program in Title 17 of the Pima County Code.

ADEQ submitted a revision to the SIP on October 29, 2012, to update its program to comply with all current federal NSR requirements, including NSR reform, with the exception of requirements pertaining to greenhouse gases (GHGs). ADEQ is currently administering the NSR requirements for GHGs under a delegation agreement with EPA. On November 2, 2015, EPA published a limited approval/limited disapproval (LA/LD) of the revised program.⁶⁸ To correct deficiencies identified by EPA in the LA/LD, ADEQ submitted revisions to its NSR program on April 28, 2017. On June 1, 2017, EPA proposed to approve the 2017 revisions to ADEQ's NSR program.⁶⁹ In the proposed action, EPA found that the 2017 submittal corrects a substantial portion of the deficiencies identified by EPA in the November 2, 2015, LA/LD. Final approval of the 2017 SIP revision was published on May 4, 2018.⁷⁰ In its final action EPA clarified that ADEQ has an approved PSD program, except for GHGs, under sections 160 through 165 of the CAA. ADEQ is currently working to address remaining issues related to its nonattainment NSR program.⁷¹

Pima County has a SIP-approved nonattainment NSR program and EPA delegation to administer the federal PSD program under 40 CFR 52.21.⁷²

According to EPA policy, the lack of a fully approved Part D nonattainment NSR program may not necessarily prevent an area from being redesignated to attainment. In its proposed action to redesignate the San Joaquin Valley Air Basin (SJVAB) PM₁₀ nonattainment area to attainment, EPA states that "a NSR program does not have to be approved prior to redesignation, provided that the area demonstrates maintenance of the standard without part D NSR in effect."⁷³ Further, "the requirements of the PSD program will apply once the area has been redesignated." EPA goes on to explain that, similar to Pima County, "EPA is the PSD permitting authority in the SJVAB under a Federal implementation plan."⁷⁴

⁶⁷ The division of jurisdiction between ADEQ and county air pollution control agencies in Arizona is governed by A.R.S. § 49-402(A) and (B). For more information regarding ADEQ and PDEQ jurisdiction for the nonattainment NSR and PSD programs see ADEQ's *State Implementation Plan Revision, New Source Review, Supplemental Information, July 2014* (submitted to EPA on July 2, 2014).

⁶⁸ See 80 FR 67319, November 2, 2015.

⁶⁹ See 82 FR 25213, June 1, 2017.

⁷⁰ See 83 FR 19631, May 4, 2018.

⁷¹ See 81 FR 40525, June 22, 2016, and 83 FR 1212, January 10, 2018.

⁷² See letter regarding "Status of NSR Authority in Maricopa and Pima Counties" from Ken Bigos, EPA Region IX, to Nancy Wrona, ADEQ, August 11, 1994.

⁷³ See 73 FR 22313, April 25, 2008. See also 61 FR 20469-20470, May 7, 1996, for additional discussion regarding redesignation in the absence of a fully approved Part D NSR program.

⁷⁴ *Ibid.*

“However, the SJVAPCD [San Joaquin Valley Air Pollution Control District] can implement the Federal PSD program through a delegation agreement with EPA or, assuming that the SJVAPCD makes necessary modifications to its PSD rules, under an EPA approved rule.”⁷⁵

The Ajo area demonstrates maintenance of the PM₁₀ standards without relying on the nonattainment NSR program. Additionally, ADEQ implements an approved PSD program (and administers the federal GHG program) and Pima County administers the federal PSD program. As such, state and county implementation of approved or delegated PSD programs should not preclude redesignation of the Ajo area to attainment.

5.2 CAA Part D – Plan Requirements for Nonattainment Areas

5.2.1 Subpart 1 – Nonattainment Areas in General

Sections 5.2.1.1 through 5.2.1.10 outline general CAA requirements for nonattainment areas and the State’s demonstrations to meet those requirements.

5.2.1.1 § 172(c)(1) – In General

“Such plan provisions shall provide for the implementation of all reasonably available control measures [RACM] as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology [RACT]) and shall provide for attainment of the national primary ambient air quality standards.”

EPA determined that the area has attained the 24-hour PM₁₀ NAAQS and suspended the requirements of this section (71 FR 6352, February 8, 2006).

5.2.1.2 § 172(c)(2) – RFP [Reasonable Further Progress]

“Such plan provisions shall require reasonable further progress” defined in CAA section 171(1) as “... annual incremental reductions in emissions ... for the purpose of ensuring attainment of the applicable national ambient air quality standards by the applicable date.”

EPA determined that the area has attained the 24-hour PM₁₀ NAAQS and suspended the requirements of this section (71 FR 6352, February 8, 2006).

5.2.1.3 § 172(c)(3) – Inventory [Emissions]

“Such plan provisions shall include a comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant or pollutants in such area, including such periodic revisions as the Administrator may determine necessary to assure that the requirements of this part are met.”

Emissions inventories and other documentation were submitted in the 1991 Ajo nonattainment area plan. The current SIP revision contains updated base-year inventories, including windblown emissions, for 2014 (most recent completed version of the National Emissions Inventory) and 2016 (most recent attainment

⁷⁵ *Ibid.*

inventory). The maintenance plan also includes projected emissions for 2021 (first year of maintenance period), 2026 (interim maintenance year), and 2031 (end of first maintenance period).

5.2.1.4 § 172(c)(4) – Identification and Quantification

“Such plan provisions shall expressly identify and quantify the emissions, if any, of any such pollutant or pollutants which will be allowed, in accordance with Section 173(a)(1)(B), from the construction and operation of major new or modified stationary sources in each such area. The plan shall demonstrate to the satisfaction of the Administrator that the emissions quantified for this purpose will be consistent with the achievement of reasonable further progress and will not interfere with attainment of the applicable national ambient air quality standard by the applicable attainment date.”

The permit program requirements of CAA Section 173(a)(1)(B) are applicable to sources located in a “targeted economic development zone” as determined by the Administrator under consultation with the Secretary of Housing and Urban Development. No such zones are currently known to exist within the Ajo PM₁₀ planning area.

5.2.1.5 § 172(c)(5) – Permits for New and Modified Major Stationary Sources

“Such plan provisions shall require permits for the construction and operation of new or modified major stationary sources anywhere in the nonattainment area, in accordance with section 173.”

The ADEQ and PDEQ nonattainment NSR permitting programs are described in Section 5.1.

5.2.1.6 § 172(c)(6) – Other Measures

“Such plan provisions shall include enforceable emissions limitations, and such other control measures, means or techniques ..., as well as schedules and timetables for compliance, as may be necessary or appropriate to provide for attainment of such standard in such area by the applicable attainment date specified in this part.”

Permanent and enforceable controls adopted and implemented in the Ajo PM₁₀ planning area are described in Chapter 4 of this document.

5.2.1.7 § 172(c)(7) – Compliance with Section 110(a)(2)

“Such plan provisions shall also meet the applicable provisions of Section 110(a)(2).”

The requirements of CAA Section 110(a)(2) and the state’s demonstration to meet those requirements are described in Section 5.1 of this plan.

5.2.1.8 § 172(c)(8) – Equivalent Techniques

“Upon application by any State, the Administrator may allow the use of equivalent modeling, emission inventory, and planning procedures, unless the Administrator determines that the proposed techniques are, in the aggregate, less effective than the methods specified by the Administrator.”

Demonstrations to meet the requirements of Part D, Subpart 1, were submitted in the 1991 nonattainment area plan.⁷⁶ Nonattainment plan requirements and demonstrations to meet those requirements, however, are subsumed by the current SIP revision. ADEQ’s intended emissions inventory

⁷⁶ See *Final State Implementation Plan for the Ajo PM₁₀ Nonattainment Area*, November 1991.

methodologies (Inventory Preparation Plan) and technical approach (Technical Protocol) for this maintenance plan and redesignation request were submitted to and reviewed by EPA.

5.2.1.9 § 172(c)(9) – Contingency Measures

“Such plan shall provide for the implementation of specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the national primary ambient air quality standard by the attainment date applicable under this part. Such measures shall be included in the plan revision as contingency measures to take effect in any such case without further action by the State or the Administrator.”

EPA determined that the area has attained the 24-hour PM₁₀ NAAQS and suspended the requirements of this section (71 FR 6352, February 8, 2006).

5.2.1.10 § 176(c) – Transportation and General Conformity

Conformity requirements under CAA section 176(c) require states to establish criteria and procedures to ensure that federally supported projects “conform” to the air quality planning goals in the federally approved or applicable SIP. The requirement for a state “to determine conformity applies to transportation plans, programs and projects developed, funded or approved under Title 23 U.S.C. and the Federal Transit Act (“transportation conformity”) as well as to other federally supported or funded projects (“general conformity”).”⁷⁷ State conformity SIP revisions are required to be consistent with federal regulations regarding consultation, enforcement and enforceability.

According to EPA policy, conformity SIP requirements are not applicable for purposes of redesignation requests under CAA section 107(d) “because state conformity rules are still required after redesignation and federal conformity rules apply where state rules have not been approved.”⁷⁸

Arizona is currently revising its procedural and consultation requirements for transportation conformity under Arizona Administrative Code (A.A.C.), Title 18, Chapter 2, Article 14. Criteria for making determinations and other provisions for general conformity are located in the SIP approved rule A.A.C. R18-2-1438.⁷⁹

5.2.2 Subpart 4 – Additional Provisions for Particulate Matter Nonattainment Areas

Sections 5.2.2.1 through 5.2.2.7 outline additional Part D requirements specific to PM₁₀ nonattainment areas classified as moderate and the State’s demonstrations to meet those requirements.

5.2.2.1 Section 188. Classifications and Attainment Dates

“Every area designated nonattainment for PM–10 pursuant to section 107(d) shall be classified at the time of such designation, by operation of law, as a moderate PM–10 nonattainment area (also referred to in this subpart as a “Moderate Area”) at the time of such designation.”

“For a Moderate Area, the attainment date shall be as expeditiously as practicable but no later than the end of the sixth calendar year after the area’s designation as nonattainment, except that, for areas

⁷⁷ See 73 FR 22313, April 25, 2008.

⁷⁸ *Ibid.*

⁷⁹ See 64 FR 19916, April 23, 1999 for EPA approval of A.A.C. R18-2-1438 into the Arizona SIP.

designated nonattainment for PM–10 under section 107(d)(4), the attainment date shall not extend beyond December 31, 1994.”

Following the CAA amendments of 1990, the Ajo area was designated nonattainment for PM₁₀ by operation of law and classified as “moderate” under CAA, Title I, Part D.

EPA determined that the area had attained the NAAQS on February 8, 2006. See Section 1.5, *Regulatory Background*, and Chapter 2, *Attainment of the Standard*, for more information on designations and attainment in the Ajo area.

5.2.2.2 § 189(a)(1)(A) – Moderate Areas; Plan Provisions [Permit Program]

“For the purpose of meeting the requirements of section 172(c)(5), a permit program providing that permits meeting the requirements of section 173 are required for the construction and operation of new and modified major stationary sources of PM–10.”

The State and Pima County permitting programs for nonattainment areas are described in Section 5.1.

5.2.2.3 § 189(a)(1)(B) –Moderate Areas; Plan Provisions [Attainment Demonstration]

“Either: (i) a demonstration (including air quality modeling) that the plan will provide for attainment by the applicable attainment date; or (ii) a demonstration that attainment by such date is impracticable.”

EPA determined that the area has attained the 24-hour PM₁₀ NAAQS and suspended the requirements of this section (71 FR 6352, February 8, 2006).

5.2.2.4 § 189(a)(1)(C) – Moderate Areas; Plan Provisions [RACM]

“Provisions to assure that reasonably available control measures for the control of PM–10 shall be implemented no later than December 10, 1993, or 4 years after designation in the case of an area classified as moderate after the date of the enactment of the Clean Air Act Amendments of 1990 [November 15, 1990].”

EPA determined that the area has attained the 24-hour PM₁₀ NAAQS and suspended the requirements of this section (71 FR 6352, February 8, 2006).

5.2.2.5 § 189(a)(2)(B) – Moderate Areas; Schedule for Plan Submissions

“A State shall submit the plan required under subparagraph (1) no later than the following:”

“18 months after the designation as nonattainment, for those areas designated nonattainment after the designations prescribed under section 107(d)(4).”

Under section 189(a)(2) of the 1990 CAA amendments, the state was required to submit a SIP revision for the Ajo nonattainment area by November 15, 1991. Arizona submitted *Final State Implementation Plan for the Ajo PM₁₀ Nonattainment Area* on November 15, 1991. See also Section 1.5, *Regulatory Background*.

5.2.2.6 § 189(c) – Milestones

“Plan revisions demonstrating attainment submitted to the Administrator for approval under this subpart shall contain quantitative milestones which are to be achieved every 3 years until the area is

redesignated attainment and which demonstrate reasonable further progress, as defined in section 171(1), toward attainment by the applicable date.”

EPA determined that the area has attained the 24-hour PM₁₀ NAAQS and suspended the requirements of this section (71 FR 6352, February 8, 2006).

5.2.2.7 § 189(e) – PM-10 Precursors

“The control requirements applicable under plans in effect under this part for major stationary sources of PM–10 shall also apply to major stationary sources of PM–10 precursors, except where the Administrator determines that such sources do not contribute significantly to PM–10 levels which exceed the standard in the area. The Administrator shall issue guidelines regarding the application of the preceding sentence.”

No major permitted sources are currently operating within the Ajo PM₁₀ planning area.

6 Maintenance Plan – CAA § 107(d)(3)(E)(iv)

Redesignation requirements in CAA section 107 require states to develop a maintenance plan under CAA 175A to assure continued attainment after redesignation. The September 4, 1992, EPA Memorandum, *Procedures for Processing Requests to Redesignate Areas to Attainment* (1992 Guidance), recommends several core provisions to consider when developing maintenance plans. Those elements and ADEQ's demonstrations to meet those provisions are outlined in Sections 6.1 through 6.5 below.

6.1 Attainment Emissions Inventory

“The State should develop an attainment emissions inventory to identify the level of emissions in the area which is sufficient to attain the NAAQS. This inventory, ... should include the emissions during the time period associated with the monitoring data showing attainment.” “Where the State has made an adequate demonstration that air quality has improved as a result of the SIP ... the attainment inventory will generally be the actual inventory at the time the area attained the standard.”⁸⁰

This SIP revision includes comprehensive base-year inventories for primary emissions of PM₁₀, including activity based and windblown emissions.⁸¹ Base inventories are provided in Appendix A, *Ajo PM₁₀ Emissions Inventory Technical Support Document*, for the following periods.

- 2011 represents the nonattainment inventory (the last year with multiple recorded exceedances of the PM₁₀ NAAQS)
- 2014 is the most recent completed version of the National Emissions Inventory
- 2016 represents the attainment inventory (area monitor shows attainment of the NAAQS)⁸²

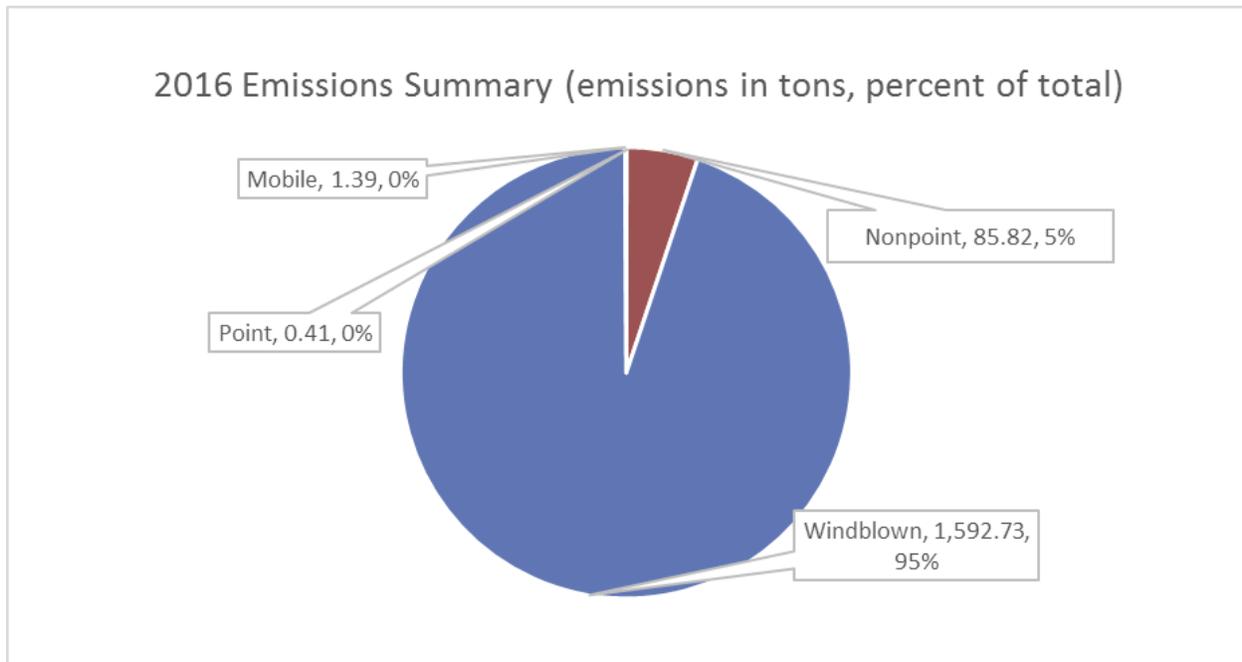
Figure 6-1 presents a summary of the 2016 attainment inventory.

⁸⁰ See *Procedures for Processing Requests to Redesignate Areas to Attainment*, Calcagni, J., Memorandum, U.S. EPA, September 4, 1992.

⁸¹ ADEQ did not include estimates of PM₁₀ precursor compounds in the emission inventory for the Ajo area. No major sources of sulfur dioxide (SO₂), oxides of nitrogen (NOx), volatile organic compounds (VOCs), or ammonia are located in the area and other sources of these emissions are not expected to be significant contributors to elevated levels of PM₁₀. See Appendix A, Section A5.1, for analyses of precursor emissions.

⁸² Although the Ajo area did not record any exceedances or violate the 24-hour standard in 2014, year 2016 was selected as the “attainment inventory” because it is from the most recent 3-year period, 2015-2017, showing compliance with the PM₁₀ NAAQS. See also Section 2.3, *24-Hour PM₁₀ NAAQS compliance*.

Figure 6-1 Attainment Emissions Inventory



The largest emissions category in the planning area is “windblown” at 95 percent of total emissions. The majority of windblown emissions emanate from land use categories “open areas and vacant land” (diffuse, widespread, and non-localized emissions sources) and “inactive properties” owned by Freeport McMoRan Inc. (i.e., closed smelting, mining, and tailings facility). These land use categories are comprised primarily of undisturbed native desert and mountainous terrain, and currently stabilized areas.⁸³ The second largest emissions category is nonpoint. Table 6-1 includes emissions estimates for 2011 and base years 2014 and 2016. Table 6-2 presents emissions estimates by source sector for these years.

Table 6-1 Emissions Estimates by Source Category (tons per year)

Source Category ⁸⁴	2011	2014	2016
Point*	51.86	51.86	0.41
Nonpoint**	101.24	85.33	85.82
Windblown	1,592.73	1,592.73	1,592.73
Mobile	1.53	1.38	1.39
Total	1,747.35	1,731.29	1,680.35

* Includes activity based emissions only. Windblown emissions from point sources is included in the windblown category.

** Re-entrained dust from paved and unpaved roads is included in the emissions estimates for nonpoint sources.

⁸³ See Appendix A, Sections A5 and A5.3.1.2 for descriptions of land use categories, their associated disturbed/undisturbed proportions, and other information on the development of the windblown emissions inventories.

⁸⁴ For the purposes of this document, a point source is defined as a large, stationary (non-mobile), identifiable source of emissions. This definition includes major and minor permitted sources by state and local agencies, as well as other non-permitted sources such as airports, EGUs, and landfills. All fugitive (excluding windblown) and non-fugitive emissions attributable to a point source, as defined above, are included as that point source’s inventory.

Table 6-2 Emissions Estimates by Source Sector (tons per year)

Source	2011	2014	2016
Point Sources	51.86	51.86	0.41
Agriculture - Crops & Livestock Dust	0.16	0.11	0.11
Commercial Cooking	0.95	0.98	0.98
Dust - Construction Dust	63.83	42.80	43.05
Dust - Paved Road Dust	6.95	4.58	4.60
Dust - Unpaved Road Dust	24.89	28.20	28.37
Dust - Windblown	1,592.73	1,592.73	1,592.73
Fires - all	0.40	0.00	0.00
Fuel Combustion - all	3.68	3.71	3.73
Industrial Processes - all	0.38	0.58	0.58
Miscellaneous Non-Industrial NEC	0.00	0.17	0.17
Mobile - Aircraft	0.00	0.00	0.00
Mobile - Locomotives	0.00	0.00	0.00
Mobile - Non-Road Equipment - all	1.23	1.09	1.09
Mobile - On-Road - all	0.30	0.29	0.30
Solvent - Industrial Surface Coating & Solvent Use	0.00	0.00	0.00
Waste Disposal	0.00	4.20	4.22
Total	1,747.35	1,731.29	1,680.35

6.2 Maintenance Demonstration

“A State may generally demonstrate maintenance of the NAAQS by either showing that future emissions of a pollutant or its precursors will not exceed the level of the attainment inventory, or by modeling to show that the future mix of sources and emission rates will not cause a violation of the NAAQS.” “In both instances, the demonstration should be for a period of 10 years following the redesignation.”

“The projected inventory should consider future growth, including population and industry, should be consistent with the attainment inventory, and should document data inputs and assumptions.” “Any assumptions concerning emission rates must reflect permanent, enforceable measures.”⁸⁵

This SIP revision demonstrates maintenance of the NAAQS by demonstrating that future emissions will remain near attainment period levels. Projections of base year inventories for all point, nonpoint, and mobile sources in the nonattainment area are included in Figure 6-2. Table 6-3 shows estimated emissions totals by source category. In addition to 2011, 2014, and 2016, inventories are provided for the following years.

- Projection year 2021 represents the first year of the maintenance period
- 2026 represents an interim maintenance year

⁸⁵ See *Procedures for Processing Requests to Redesignate Areas to Attainment*, Calcagni, J., Memorandum, U.S. EPA, September 4, 1992.

- 2031 is the end of first maintenance period

These projections indicate that point source emissions in the area are estimated to remain at attainment period levels due to permanent facility closure and implemented measures. Only slight growth is expected for nonpoint and mobile source emissions.

Figure 6-2 Ajo Base Year PM₁₀ Emissions and Projections

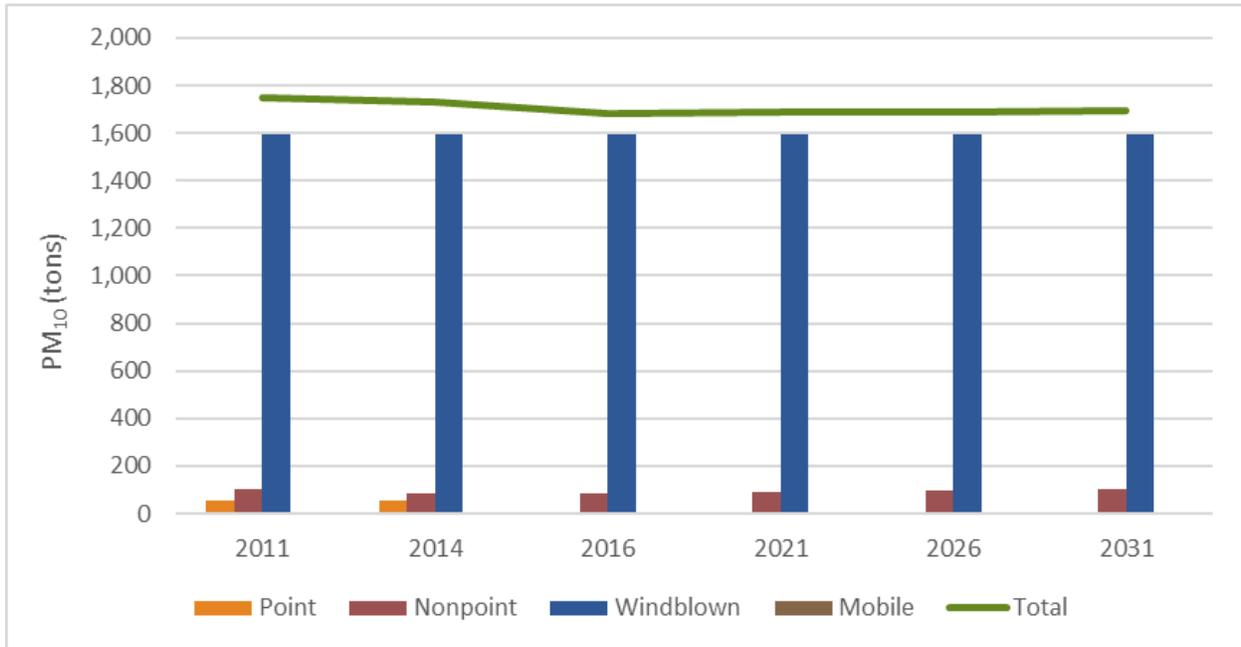


Table 6-3 Ajo PM₁₀ Emissions Summary by Source Category (tons per year)

Source Category	2011	2014	2016	2021	2026	2031
Point*	51.86	51.86	0.41	0.41	0.41	0.41
Nonpoint**	101.24	85.33	85.82	91.17	95.98	100.56
Windblown	1,592.73	1,592.73	1,592.73	1,592.73	1,592.73	1,592.73
Mobile	1.53	1.38	1.39	1.42	1.50	1.56
Total	1,747.35	1,731.29	1,680.35	1,685.73	1,690.61	1,695.26

* Includes activity based emissions only. Windblown emissions from point sources is included in the windblown category.

** Re-entrained dust from paved and unpaved roads is included in the emissions estimates for nonpoint sources.

Closure and capping of the Ajo tailings impoundments and slag reprocessing facility provided permanent emissions reductions to the area (see Section 4.3, Emissions Reductions from Tailings and Slag Storage

Area Rule). These reductions are reflected in the projected future emissions estimates. Together, these facilities represented the largest anthropogenic point sources of emissions in the area.

Although the total emissions inventories are dominated by windblown emissions from large expanses of undisturbed land, historically, the tailings impoundments and slag reprocessing areas likely had significant impacts on elevated PM₁₀ concentrations in the community (see Sections 4.1, *Sources of PM₁₀*, and 4.4, *Improvement in Air Quality*). These sources (tailings and slag areas) represented a *concentrated localized source of emissions*, whereas, other sources in the windblown category primarily represent a *diffuse source of emissions* spread across the entire nonattainment area. Both the tailings and slag areas are located adjacent to the ambient monitor and near the Ajo population center. The tailings impoundments were stabilized in 1991. The slag reprocessing facility, however, was still operating at the time of the most recent ambient exceedances in 2011 and 2013 (see Section 2.2, *Ambient PM₁₀ Data Trends*). Winds during these recent events were generally from a southerly direction, placing the facility upwind of the town and ambient monitor. No exceedances have occurred since the closure and stabilization of the slag reprocessing area in 2014/2015.

Following redesignation, any new sources are subject to Prevention of Significant Deterioration (PSD) permitting procedures (see Section 5.1). PSD regulations were established to preserve air quality in areas where ambient concentrations are below the NAAQS and require stationary sources to undergo preconstruction review, utilizing best available control technology (BACT), before a facility is constructed, modified, or reconstructed.

In addition to the reductions in emissions from the closure of significant sources (i.e., smelter, mine, slag reprocessing facility), growth of the Ajo area is limited. The area is bounded on the West/Northwest by the Cabeza Prieta National Wildlife Refuge. The Barry M. Goldwater Air Force Range is less than one mile north and the Tohono O'odham Nation lies approximately five miles to the east. Organ Pipe National Monument is located ten miles to the south. This limits the available space for the Ajo area to grow.

State Route 85 passes through the center of Ajo, linking Mexican border areas to Interstate 8 in Gila Bend. While the Ajo area does get through traffic going to and from Mexico, this traffic is considerably less than that of the other two major border crossings in Arizona (Yuma and Nogales). Additionally, the Arizona Department of Transportation's traffic data does not show any major increase in traffic in the area over the past 10 years. See Appendix A, Sections A5 and A6, for more information on emissions projection methodologies.

Because projected nonpoint and mobile source emissions show slight growth during the maintenance period, an additional analysis was necessary to predict the impact of this growth on ambient PM₁₀ concentrations. The increase in the inventory is less than one percent over the next 15 years, as shown in Table 6-4. In order to determine the effect this slight emissions increase will have on the ambient air in the area, the area's design concentration for 2017 was scaled up by the same percentage increase for the maintenance period inventory as projected from the attainment year (Table 6-4). The most recent design concentration of 102 µg/m³ (for year 2017) was determined for the Ajo monitor using the "Table Look-Up" method described in the 1987 *PM₁₀ SIP Development Guideline*.⁸⁶ The projected design concentrations for Ajo are less than 70 percent of the NAAQS, well within a margin of safety below the standard.

⁸⁶ See *PM₁₀ SIP Development Guideline*, U.S. EPA, June 1987 (Publication No. EPA-450/2-86-001), Chapter 6; *Appendix A, Ajo PM₁₀ Emission Inventory Technical Support Document*, Section A6; and Section 4.4.1 (footnote 61) of this document for more information on design concentrations.

Table 6-4 Scaled Up Design Concentrations

	2016	2021	2026	2031
Total Emissions	1,680.35	1,685.73	1,690.61	1,695.26
% Change from Attainment Year	0.00%	0.32%	0.61%	0.89%
Scaled Up 2017 Design Concentration (µg/m³)	102	102	103	103

In conclusion, maintenance of the 24-hour PM₁₀ NAAQS is demonstrated as follows.

- The primary permitted point sources of emissions in the Ajo area have shut down, permits terminated, and their process areas stabilized (i.e., capping of the tailings impoundments and slag area)
- The Ajo area is expected to experience only slight growth in emissions from attainment inventory levels, less than one percent through year 2031
- Projected design concentrations demonstrate that the area will continue to maintain the NAAQS through the maintenance period

6.3 Ambient Air Quality Monitoring Network

“Once an area has been redesignated, the State should continue to operate an appropriate air quality monitoring network, in accordance with 40 CFR Part 58, to verify the attainment status of the area.”⁸⁷

ADEQ commits to continue operating a PM₁₀ air quality monitoring network, as appropriate. Any changes to the network will be made in consultation with EPA.

6.4 Verification of Continued Attainment

“Each State should ensure that it has the legal authority to implement and enforce all measures necessary to attain and to maintain the NAAQS. Sections 110(a)(2)(B) and (F) of the Clean Air Act, as amended, and regulations promulgated at 40 CFR 51.110(k), suggest that one such measure is the acquisition of ambient and source emission data to demonstrate attainment and maintenance.

Regardless of whether the maintenance demonstration is based on a showing that future emission inventories will not exceed the attainment inventory or on modeling, the state submittal should indicate how the state will track the progress of the maintenance plan. This is necessary due to the fact that the emission projections made for the maintenance demonstration depend on assumptions of point and area source growth.”⁸⁸

Progress of the maintenance plan will be tracked, in part, through updates to reported emissions inventories and permit applications received for sources of PM₁₀. ADEQ commits to perform a comprehensive review of the factors and assumptions that were used in developing the attainment and

⁸⁷ See *Procedures for Processing Requests to Redesignate Areas to Attainment*, Calcagni, J., Memorandum, U.S. EPA, September 4, 1992.

⁸⁸ *Ibid.*

projected inventories to determine whether significant change has occurred. The review will be performed for the interim projection year 2026 and may include the following elements.

- Permit applications and source reports (point sources, prescribed burns, construction)
- Population data
- Agricultural activity
- Wildfire/prescribed burn data
- Vehicle miles traveled

Arizona Revised Statutes Title 49, "The Environment," divides responsibility for meeting the requirements of the CAA among the state, county agencies, and regional planning organizations. Currently the state and three county agencies, including the Pima County Department of Environmental Quality, operate air quality control programs under direct or delegated authority.⁸⁹

ADEQ has primary responsibility for air pollution control and abatement, and as such, is required to "maintain a state implementation plan that provides for implementation, maintenance and enforcement of National Ambient Air Quality Standards and protection of visibility as required by the Clean Air Act" for areas outside of tribal lands.⁹⁰ ADEQ is also responsible for coordinating, along with local officials, the development, adoption, and enforcement of control measures and permits where no local air quality control program exists. In addition, ADEQ has original jurisdiction for mobile and certain stationary sources including smelting of metal ores, coal-fired electrical generating stations, and portable sources but may delegate jurisdiction to a local agency as allowed under state law.⁹¹

Except for the sources noted above, the county agencies have original jurisdiction for the issuance, administration, and enforcement of permits.⁹² The State may assert jurisdiction where the local non-tribal agency is unable to fulfill any function or duty as required. State law also provides direct county authority to adopt and enforce programs, rules, and ordinances for the prevention, control, and abatement of air pollution.⁹³

ADEQ and PDEQ will maintain the necessary resources to actively enforce any violations of the provisions contained in this plan and will submit to EPA any changes to rules or emission limits applicable to planning area PM sources as a SIP revision.

6.5 Contingency Plan

"Section 175A of the Act also requires that a maintenance plan include contingency provisions, as necessary, to promptly correct any violation of the NAAQS that occurs after redesignation of the area." "For the purposes of section 175A, a State is not required to have fully adopted contingency measures that will take effect without further action by the State in order for the maintenance plan to be approved. However, the contingency plan is considered to be an enforceable part of the SIP and should

⁸⁹ See ADEQ's 1987 PM₁₀ Infrastructure State Implementation Plan, June 30, 2017, for more information on state and county authority to implement and enforce measures necessary to attain and to maintain the PM₁₀ NAAQS.

⁹⁰ A.R.S. § 49-401 and 404.

⁹¹ A.R.S. § 49-107 and 402.

⁹² *Ibid.*

⁹³ A.R.S. Title 49, Chapter 3, Article 3.

*ensure that the contingency measures are adopted expediently once they are triggered. The plan should clearly identify the measures to be adopted, a schedule and procedure for adoption and implementation, and a specific time limit for action by the State. As a necessary part of the plan, the State should also identify specific indicators, or triggers, which will be used to determine when the contingency measures need to be implemented.*⁹⁴

The following contingency provisions describe the steps to evaluate the need for additional reasonable measures to prevent future violations of the NAAQS. The type and scope of any new control measures will be determined following an evaluation of the ambient exceedances that caused the contingency plan to be triggered. Additionally, the State will continue to implement all measures which were contained in the state implementation plan for the area before redesignation of the area as an attainment area.

6.5.1 Contingency Plan Timeline

The timing of contingency plan provisions are outlined below.

- An exceedance of the 24-hour design value is the contingency plan trigger level (the 3-year average expected rate of exceedance/violation of the NAAQS)
- Within 60 days of triggering the contingency plan; begin analysis of the cause or causes of the exceedance
 - The analysis should include but is not limited to: review of the ambient monitoring network for instrument malfunction and validation of data, meteorological evaluation, exceptional event evaluation, and assessment of emissions sources contributing to elevated levels of PM₁₀
- Within 12 months of triggering the contingency plan; begin adoption of new rules/measures (if it is determined that the violation of the NAAQS is due to emissions sources within the nonattainment area and new measures are necessary)
- Within 18 months of triggering the contingency plan; complete adoption of new measures
- No later than 6 months after final adoption of new measures; compliance with new measures

6.5.2 Evaluation of New Measures

Once the contingency plan is triggered ADEQ will perform an analysis to determine the need for adoption and implementation of new measures. The evaluation may include the following steps.

- Determine which source/sources likely contributed to elevated concentrations of PM₁₀ at ambient monitoring sites
 - This evaluation may include modeling, proportional analysis, or transport analysis
- For each significant source sector, compile a list of existing control measures

⁹⁴ See *Procedures for Processing Requests to Redesignate Areas to Attainment*, Calcagni, J., Memorandum, U.S. EPA, September 4, 1992.

- Verify emissions sources are in compliance with existing measures
- For exceedance days that do not qualify as an exceptional event; if necessary, develop new measures where no measures exist or existing measures should be strengthened. New measures should meet the following criteria
 - Measure is permanent and enforceable (e.g., meets EPA enforceability criteria such as clearly defined standards⁹⁵)
- For exceedance days that likely qualify as an exceptional event; prepare and submit the necessary documentation for a natural or exceptional event.⁹⁶
 - An exceedance of the 24-hour design value for which the area meets the demonstration requirements for data exclusion under the exceptional events rule would not trigger the maintenance contingency plan.
 - If new measures are needed to satisfy requirements of the exceptional events rule, selected controls should meet the following criteria
 - Measure is permanent and enforceable (e.g., meets EPA enforceability criteria such as clearly defined standards)
 - Measure meets "reasonable" level of control per exceptional event rule

6.5.3 Potential Contingency Measures

Contingency measures should concentrate on the significant source categories contributing to area PM₁₀ emissions. Table 6-5 lists potential contingency measures that may be considered for implementation under the contingency plan.

Table 6-5 Potential PM₁₀ Contingency Measures

Emissions Category	Potential Contingency Measure
Paved Roads	<ul style="list-style-type: none"> • Increase stabilization of unpaved shoulders • Increase stabilization of access points from unpaved roads
Unpaved Roads	<ul style="list-style-type: none"> • Increase stabilization of unpaved roads and shoulders • Post Speed limits to decrease vehicle speeds • Restrict access to decrease Average Daily Trips (ADT) and VMT
Unpaved parking	<ul style="list-style-type: none"> • Pave or stabilize unpaved parking areas
Disturbed open areas and lots	<ul style="list-style-type: none"> • Stabilize disturbed open areas • Restrict access to minimize disturbance

⁹⁵ See *Review of State Implementation Plans and Revisions for Enforceability and Legal Sufficiency*, Potter, J. C., et al., Memorandum, U.S. EPA, September 23, 1987, and *Review of State Implementation Plans and Revisions for Enforceability and Legal Sufficiency*, Alushin, M. S., et al., Memorandum, U.S. EPA, September 23, 1987.

⁹⁶ See the exceptional events definitions and rule at 40 CFR 50.1 and 50.14 and revisions to the rule, *Treatment of Data Influenced by Exceptional Events*, 81 FR 68216, October 3, 2016.

Emissions Category	Potential Contingency Measure
Material handling and storage	<ul style="list-style-type: none">• Review/revise dust control measures for material handling and storage
Construction	<ul style="list-style-type: none">• Review/revise dust control measures for construction activities

7 Motor Vehicle Emissions Budget for Transportation Conformity

7.1 Introduction

“Transportation conformity is required by the Clean Air Act section 176(c) (42 U.S.C. 7506(c)) to ensure that federal funding and approval are given to highway and transit projects that are consistent with (“conform to”) the air quality goals established by a state air quality implementation plan (SIP). Conformity, to the purpose of the SIP, means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the national ambient air quality standards.”⁹⁷

The conformity rules at 40 CFR 51.390 and 40 CFR 93 require SIPs to include maximum allowable emissions or a “budget” for on-road mobile sources determined to be significant under 40 CFR 93.109. Projected emissions from future transportation projects are compared to the approved budget to ensure they do not exceed levels demonstrated necessary to attain and maintain the NAAQS.

Motor vehicle emissions budgets (MVEBs) are needed only when there is a control strategy SIP for nonattainment areas or a maintenance demonstration. According to 40 CFR 93.101, a “*Control strategy implementation plan revision is the implementation plan which contains specific strategies for controlling the emissions of and reducing ambient levels of pollutants in order to satisfy CAA requirements for demonstrations of reasonable further progress and attainment ...*” The rule defines motor vehicle emissions budget as “... *that portion of the total allowable [highway and transit] emissions defined in the submitted or approved control strategy implementation plan revision or maintenance plan ... for the purpose of meeting reasonable further progress milestones or demonstrating attainment or maintenance of the NAAQS ...*”

Requirements to develop additional control strategies and to demonstrate reasonable further progress and attainment were suspended for the Ajo PM₁₀ nonattainment area following EPA’s clean data finding.⁹⁸ Redesignation to attainment requests, however, require the state to demonstrate continued maintenance of the NAAQS. Therefore, on-road mobile sources are evaluated to determine significance and the need to develop a conformity budget for primary PM₁₀.⁹⁹

7.2 Procedural Overview

The following steps outline general procedures for evaluating motor vehicle emissions in the Ajo PM₁₀ planning area for transportation conformity purposes.

⁹⁷ Source: *General Information for Transportation Conformity*, <https://www.epa.gov/state-and-local-transportation/general-information-transportation-and-conformity> (July 19, 2017).

⁹⁸ See 71 FR 6352, February 8, 2006.

⁹⁹ ADEQ did not include estimates of PM₁₀ precursor compounds in the emission inventory for the Ajo area. Sources of SO₂, NO_x, VOCs, or ammonia emissions are not expected to be significant contributors to elevated levels of PM₁₀ in the area. See Appendix A, Section A5.1, for more information.

1. Determine the overall contribution of motor vehicle PM₁₀ emissions in the Ajo PM₁₀ nonattainment area.
 - a. If motor vehicle emissions constitute a significant proportion of total PM₁₀ emissions, develop a motor vehicle emission budget for the area.
 - b. If motor vehicle emissions constitute an insignificant proportion of total PM₁₀ emissions, include an explicit statement that no regional emissions analyses for PM₁₀ or its precursors is necessary for attainment or maintenance and therefore is not necessary for conformity.
 - c. Additionally, perform an analysis showing how future population growth affects the proportion of motor vehicle emissions in the Ajo PM₁₀ area. Determine whether future motor vehicle emissions will contribute significantly to the PM₁₀ issue in the area.
2. Verify through consultation with the Arizona Department of Transportation whether any major transportation projects are anticipated to occur in the Ajo PM₁₀ area within the maintenance timeframe of this plan.
 - a. If any major transportation projects are anticipated, evaluate their potential impact on PM₁₀ emissions in the Ajo PM₁₀ area and their potential effect on maintenance of the NAAQS.

7.3 Evaluation of On-Road Mobile Sources

According to federal transportation conformity rules an area is not required to satisfy a regional emissions analysis, showing noninterference with attainment and maintenance of the NAAQS, if EPA finds that the SIP demonstrates regional motor vehicle emissions are an insignificant contributor to the air quality problem for that pollutant/precursor and NAAQS.¹⁰⁰ Under such a finding, the SIP would not be required to explicitly establish a budget to be used in conformity determinations. In an evaluation to determine the significance of motor vehicle emissions the state should consider the following factors.¹⁰¹

- the current state of air quality as determined by monitoring data for that NAAQS
- the absence of SIP motor vehicle control measures
- the amount (percentage) of motor vehicle emissions relative to the total SIP inventory
- historical trends and future projections in the growth of motor vehicle emissions

¹⁰⁰ See 40 CFR 93.109(f), "Areas with insignificant motor vehicle emissions;" 40 CFR 118, "Criteria and procedures: Motor vehicle emissions budget;" and 40 CFR 93.119, "Criteria and procedures: Interim emissions in areas without motor vehicle emissions budgets."

¹⁰¹ See 40 CFR 93.109(f).

7.3.1 Current State of Air Quality

The Ajo planning area is attaining the PM₁₀ NAAQS and no exceedances of the 24-hour standard have occurred since 2013. Chapter 2 provides additional information on ambient monitoring data trends and current NAAQS compliance.

7.3.2 Absence of SIP Motor Vehicle Control Measures

The SIP does not rely on control of on-road emissions to demonstrate attainment and maintenance of the PM₁₀ NAAQS. Attainment and maintenance is demonstrated by implementation of fugitive dust measures applicable to the Ajo mine tailings and slag storage areas. Chapters 4 and 6, and Appendix A provide details of the Ajo emissions control strategy.

7.3.3 Motor Vehicle Emissions Inventory and Projections

For an insignificance determination the motor vehicle inventory should include PM₁₀ estimates from vehicle exhaust, paved and unpaved road re-entrainment, and emissions from road construction. Once these PM₁₀ emissions have been estimated their totals should be compared to total PM₁₀ emissions for the area. In general, significance applies on the basis of the entire nonattainment or maintenance area rather than a portion of the area. Table 7-1 provides a comparison of Ajo planning area mobile emissions to the total inventory.¹⁰²

Table 7-1 Transportation Related Emissions

Emission Sector	PM ₁₀ (tons)					
	2011	2014	2016	2021	2026	2031
On-road Mobile	0.30	0.29	0.30	0.26	0.27	0.28
Re-entrained Dust	31.84	32.78	32.97	35.03	36.88	38.63
Road Construction	0	0	0	0	0	0
Total Motor Vehicle Contribution	32.14	33.07	33.27	35.29	37.15	38.91
Percent of Total Inventory	1.84%	1.91%	1.98%	2.09%	2.20%	2.30%

- On-Road Mobile – Includes PM₁₀ emissions from vehicle exhaust, tire wear, and brake wear. Obtained by summing the PM₁₀ from the four on-road emission sectors (see Appendix A, Table A-48).
 - Diesel Heavy Duty Vehicles
 - Diesel Light Duty Vehicles
 - Non-Diesel Heavy Duty Vehicles
 - Non-Diesel Light Duty Vehicles
- Re-entrained Dust – Includes re-entrained PM₁₀ from paved & unpaved roads. Obtained by summing the PM₁₀ totals in the Dust - Paved Road Dust, and Dust - Unpaved Road Dust nonpoint emission sectors (see Appendix A, Table A-21).

¹⁰² See Appendix A, Section A5.4.4 for complete evaluation of transportation conformity related emissions sources.

- Road Construction – No major road construction projects have occurred in the Ajo PM₁₀ area and no major future projects are included in any current planning documents.¹⁰³

The Ajo PM₁₀ planning area is a geographically small nonattainment area with a small population. Area emissions totals are dominated by a few stationary sources. On-road mobile emissions comprise less than 2 percent of the 2014 and 2016 base-year inventories and less than 2.5 percent of projected maintenance period inventories. ADEQ does not reasonably expect that the area will experience enough motor vehicle emissions growth for a violation of the PM₁₀ NAAQS to occur.

7.4 Conclusion for Transportation Conformity

Based on the data and findings, motor vehicle emissions constitute an insignificant portion of total PM₁₀ emissions in the Ajo planning area. PM₁₀ source categories are dominated by windblown emissions, with conformity related emissions comprising only 1.91% of the 2014 emissions inventory. With no new road construction or road projects anticipated to occur, ADEQ does not expect that mobile emissions will become a significant source of PM₁₀ during the maintenance period.

Because conformity related motor vehicle emissions are an insignificant contributor to elevated levels of PM₁₀, no regional emissions analyses for PM₁₀ or its precursors is necessary for the Ajo PM₁₀ planning area and it is not necessary to establish a conformity related emissions budget in the Ajo PM₁₀ SIP.

¹⁰³ Per review of Arizona Department of Transportation's five-year planning documents, <https://www.azdot.gov/planning/transportation-programming/overview>.

8 Conclusion

The 24-hour PM₁₀ NAAQS were promulgated in 1987, replacing total suspended particulates as the indicator for the particulate matter air quality standards. The Ajo area was designated nonattainment for PM₁₀ by operation of law following the CAA amendments of 1990. Since that time, closure and stabilization of local mine tailings impoundments and a slag reprocessing area have resulted in no recorded exceedances of the PM₁₀ NAAQS for 26 of the last 28 years. A new fugitive dust rule ensures that emissions reductions achieved by local sources will continue into the future. By complying with nonattainment and redesignation related regulatory requirements under the Clean Air Act and applicable guidance, this SIP revision provides an enforceable vehicle for the enclosed control strategy.

The analyses and data provided in this plan supersede previous submissions in 1988 and 1991 (*see* Chapter 3) and demonstrate that all nonattainment area and redesignation requirements have been met. The clean air quality record, enforceable control measures, and projections of future emissions all show that the area will continue to maintain the PM₁₀ air quality standards through 2031.

ADEQ requests that EPA approve this revision to the Arizona SIP, including the regulation Pima County Code 17.16.125 submitted for approval in Appendix C, and redesignate the Ajo nonattainment area to attainment for the 24-hour PM₁₀ NAAQS. In addition, because the NAAQS for total suspended particulates have been replaced, ADEQ is also requesting that EPA delete the TSP nonattainment designation for the Ajo area.

Appendix A: Ajo PM₁₀ Emission Inventory Technical Support Document

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Appendix A

Ajo PM₁₀ Emission Inventory Technical Support Document

Air Quality Division
May 7, 2019

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A1 Introduction

A1.1 Purpose

The Arizona Department of Environmental Quality (ADEQ) prepared this technical support document (TSD) to support the State Implementation Plan revision for the Ajo PM₁₀ Nonattainment Area (NAA). This SIP revision seeks to:

1. Show that the Ajo PM₁₀ area is currently in attainment with the PM₁₀ NAAQS.
2. Provide justification for the redesignation of the Ajo PM₁₀ area to attainment.
3. Provide justification that the Ajo area will maintain compliance with the NAAQS.

To achieve these goals the SIP revision relies on emission inventories of PM₁₀ for two distinct time periods: a base/attainment year and a maintenance period.

ADEQ utilized 2014 as the base year, 2016 as the attainment year and 2021-2031 as the maintenance period for this SIP revision. Additionally, 2011 is utilized as a pre-base year for informational purposes. Emission inventories were developed as outlined in Table A-1, all of which relied primarily on two data sources: EPA's National Emission Inventory (NEI) and ADEQ's internal point source database. Additional emissions data have been included to supplement the source categories of the NEI. These additional source categories, along with the calculation methodology, are included in Section A5.3.1.

Table A-1: Emission Inventory Outline

Inventory Year	Inventory Purpose	Data Source
2011	Pre-Base Year	2011 NEIv1 & ADEQ Internal Point Source Database
2014	Base Year	2014 NEIv1 & ADEQ Internal Point Source Database
2016	Attainment Year	Projected from base year
2021	Maintenance Demonstration	Projected from base year
2026	Maintenance Demonstration	Projected from base year
2031	Maintenance Demonstration	Projected from base year

A1.2 Sources of PM₁₀ Emissions

Source categories included in the inventory are:

- Point Source Emissions
- Nonpoint Source Emissions
- Onroad Mobile Emissions
- Nonroad Mobile Emissions

ADEQ compiled a 2014 base year inventory containing actual PM₁₀ emissions from the source categories listed above. A more detailed description of these sectors is provided in Section A5. Point source emissions were gathered from ADEQ's internal point source database while other

categories (nonpoint, onroad, and nonroad) are based primarily on 2014 NEIv1 data. One additional nonpoint source category – windblown dust from vacant land – has been included as it was not represented in the 2014 NEIv1 dataset.

A1.3 Base Year Determination

The base year for the Ajo PM₁₀ SIP revision is 2014. The main factor that influenced choosing 2014 as the base year is that the 2014 NEIv1 represents the most current, accurate, and comprehensive inventory available at the time of inventory development. Additionally, 2011 is utilized as an additional informative pre-base inventory year. The 2011 inventory was developed utilizing the 2011 NEIv2 and the same methods as the 2014 inventory as described below.

A1.4 Population

The Ajo PM₁₀ NAA has been codified in 40 CFR 81.303 and is comprised of the portions of Pima County bound by the townships and ranges listed in Table A-2 and represented geographically in Figure A-1. Population estimates for the entire Ajo PM₁₀ NAA are also presented in Table A-2. The Ajo NAA encompasses the majority of the town of Ajo (as defined by the census CDP boundary), and is nearby to the town of Why, for which population data has been included in Table A-3 and which are represented graphically in Figure A-1.

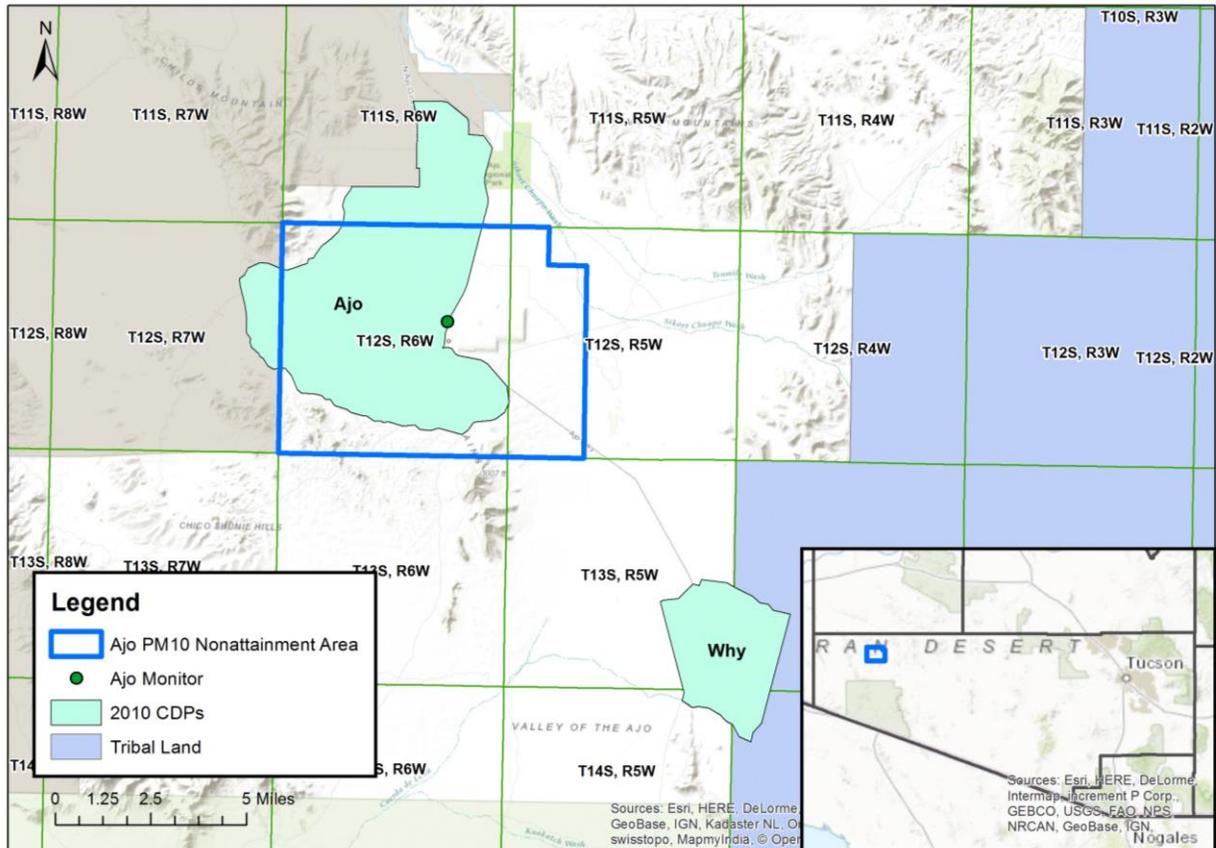
Pima County is one of four border counties in the southern part of Arizona; surrounded by Santa Cruz and Cochise Counties to the east, Maricopa and Pinal Counties to the north, Yuma County to the west, and Mexico to the south. The county seat of Pima County is Tucson, which is approximately 107 miles southeast from Phoenix. The incorporated communities of South Tucson, Marana, and Oro Valley also reside in Pima County, as well as the town of Sahuarita located on the Tohono O’odham Reservation. ADOA estimated the 2014 population of Pima County at 1,007,162 persons. Pima County had a 2010 population density of 106.7 persons per square mile, compared to 414.9 and 56.3 persons per square mile for Maricopa County and the state respectively¹.

¹ US Census Bureau. (January 6, 2014), *State and County QuickFacts*. U.S. Department of Commerce. Retrieved from: <https://www.census.gov/quickfacts/fact/table/pimacountyarizona,AZ,US/PST045216> on September 13, 2017.

Table A-2: Geographic Location and Population

Ajo PM₁₀ NAA²	
Land Area	47 mi ²
2014 Population	3,295
2021 Projected Population	3,521
2031 Projected Population	3,884
NAA Designated Area (40 CFR 81.303)	
Township T12S, R6W, and the following sections of Township T12S, R5W:	
a. Sections 6-8	
b. Sections 17-20, and	
c. Sections 29-32	

Figure A-1: Ajo PM₁₀ Township/Range



² ADOA provided the population projects for Pima County. ADOA’s projection methodologies are presented in Exhibit A11 of this TSD.

Table A-3: Towns Within and Near Ajo PM₁₀ NAA

Location	2010 Population ³
Town of Ajo	3,304
Town of Why	167

A1.5 Land Use

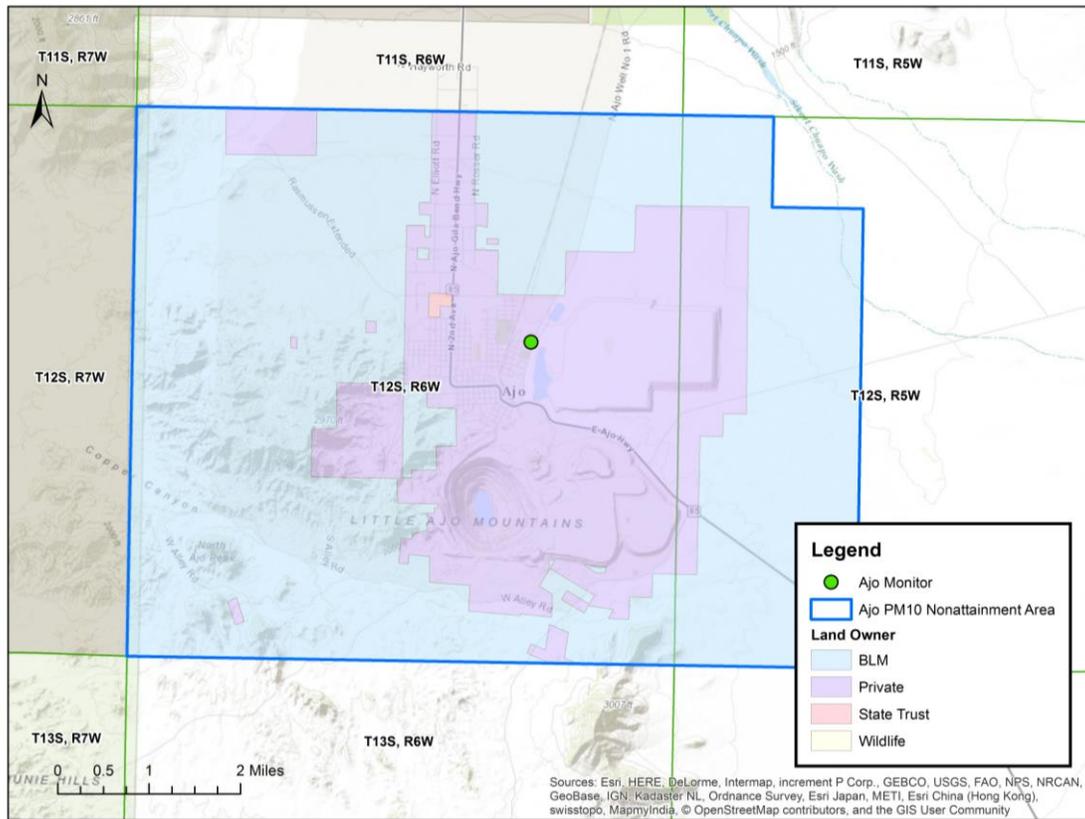
The Ajo PM₁₀ NAA encompasses a small portion of Pima County that is approximately 47 square miles. The majority of the land within the PM₁₀ NAA is owned and managed by either the Bureau of Land Management (67%). Privately owned land makes up the next largest percentage of the NAA (32%), which includes the inactive Freeport-McMoRan Ajo mine, the closed site of the smelter, and the tailings impoundment. A breakdown of the land owners in the PM₁₀ NAA is presented in Table A-4 and Figure A-2.

Table A-4: Land Owners

Ajo PM ₁₀ NAA		
Land Owner	Area (square miles)	Percentage
Bureau of Land Mgmt.	31.77	67.54%
Private Land	15.20	32.32%
State Trust Land	0.05	0.11%
Cabeza Prieta National Wildlife Refuge	0.02	0.03%

³ U.S. Census Bureau; Census 2010, Profile of General Population and Housing Characteristics: 2010; generated by Jessica Wood; using American FactFinder; <<http://factfinder2.census.gov>>; (September 13, 2017).

Figure A-2: Land Owners



Note: The Cabeza Prieta National Wildlife Refuge portion of the NAA is a small narrow portion along the border between township T12S, R7W and T12S, R6W and cannot be seen at this scale on the map.

A2 Monitoring Network

This chapter presents a summary of the meteorological and ambient PM₁₀ monitor located in the Ajo area. This monitoring station is presented in Figure A-3 and Table A-5. The Ajo area contains only one monitor maintained by ADEQ, which is the PM₁₀ NAAQS compliance monitor. Therefore, this attainment and maintenance demonstration relies only on data collected by the Ajo monitor.

Figure A-3: Monitoring Location



Table A-5: Ajo Monitor Description

Site Information			
AQS ID	04-019-0001	Surrounding Area	Residential/Commercial
Street Address	1211 Well Rd. Ajo, AZ 85321	Groundcover	Gravel
County	Pima	Latitude	32.3820
CBSA	Tucson	Longitude	-112.8575
Distance to roadway	109m	Elevation	515 m
Monitoring Information			
Pollutant	PM₁₀	Wind	Temp/RH
Basic monitoring objective	NAAQS Comparison	--	--
Site type(s)	Population Exposure	Population Exposure	Population Exposure
Monitor type(s)	SLAMS	--	--
Instrument manufacture and model	Thermo TEOM 1400AB	RM Young 5305 Anemometer	Vaisala HMP 155 Probe
Spatial scale	Neighborhood	Neighborhood	Neighborhood
Monitor start date	02/11/1991	07/01/1969	02/11/2014

A3 Meteorological Trends

This section of the TSD examines the meteorological conditions of the Ajo area, specifically focusing on trends in wind speed and direction and the possible impact of these conditions on ambient PM₁₀ concentrations.

Synoptic scale air flows and local topographically driven surface winds influence the speed and direction of air pollution transport throughout the Ajo area. To examine the meteorological trends in the Ajo area, ADEQ looked at both diurnal and seasonal average wind speed and direction. ADEQ first looked at diurnal average wind speed and wind direction. To perform this analysis ADEQ averaged wind speeds and directions for each hour of the day for the meteorological monitor in the Ajo area. These diurnal and seasonal average values are presented in Section A3.1 and Section A3.2, respectively.

A3.1 Diurnal Wind Speed & Direction

ADEQ averaged wind speed and wind direction data for 2011-2017 from the meteorological station in the Ajo area to create an average profile for the entire Ajo area. These average values were used as the basis for creating the diurnal profile presented in Figure A-4 and Table A-6. Based on this data, the Ajo area generally experiences lower wind speeds during the early morning hours. Around mid-morning wind speeds generally increase, peaking during mid-afternoon. Wind direction is generally from the south-southwest in the early morning, then around mid-morning winds tend to shift and come out of the west.

Figure A-4: Diurnal Average Wind Speed & Direction

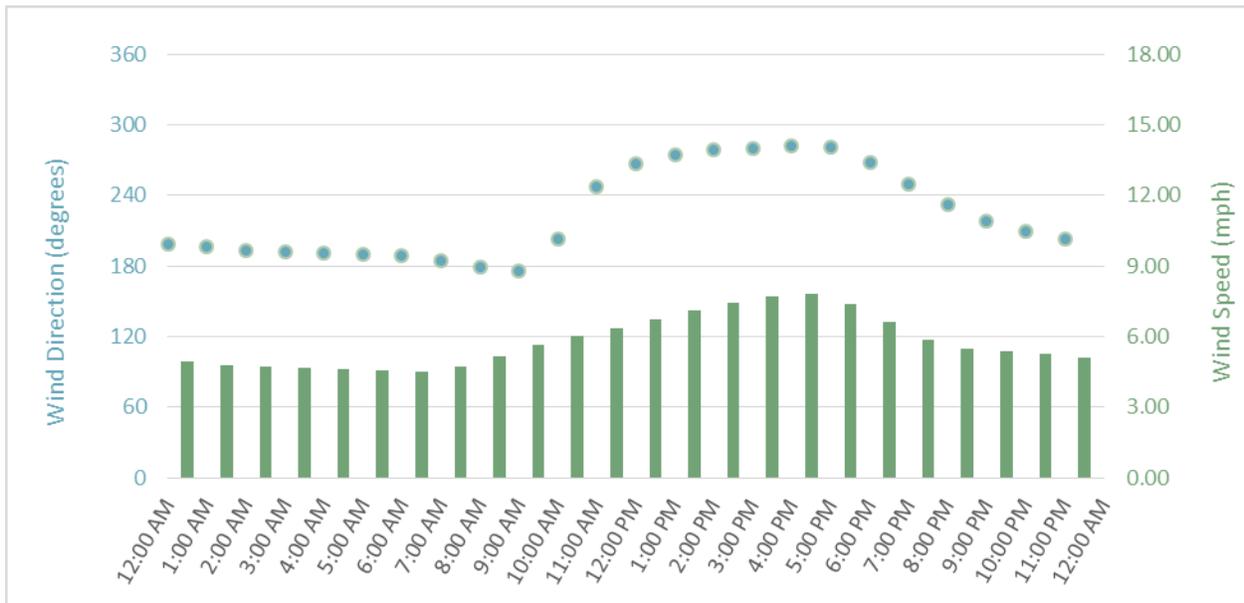


Table A-6: Diurnal Average Wind Speed & Direction

Hour	Wind Direction (Degrees)	Wind Speed (mph)	Hour	Wind Direction (Degrees)	Wind Speed (mph)
12:00 AM	198	4.93	12:00 PM	267	6.72
1:00 AM	196	4.79	1:00 PM	274	7.11
2:00 AM	194	4.72	2:00 PM	278	7.43
3:00 AM	192	4.67	3:00 PM	280	7.72
4:00 AM	191	4.61	4:00 PM	282	7.79
5:00 AM	190	4.53	5:00 PM	281	7.37
6:00 AM	189	4.53	6:00 PM	268	6.60
7:00 AM	185	4.74	7:00 PM	250	5.87
8:00 AM	179	5.16	8:00 PM	232	5.49
9:00 AM	175	5.64	9:00 PM	219	5.39
10:00 AM	203	6.00	10:00 PM	210	5.24
11:00 AM	248	6.36	11:00 PM	203	5.08

A3.2 Monthly Wind Speed & Direction

ADEQ averaged wind speed and wind direction data for 2011-2017 from the meteorological station in the Ajo area to create an average profile for the entire Ajo area. These average values were used as the basis for creating the monthly profile presented in Figure A-5 and Table A-7. When examining monthly average wind speed and direction there does seem to be a seasonal correlation, with stronger southerly winds in the summer and lighter winds out of the west during the winter.

Figure A-5: Monthly Average Wind Speed & Direction

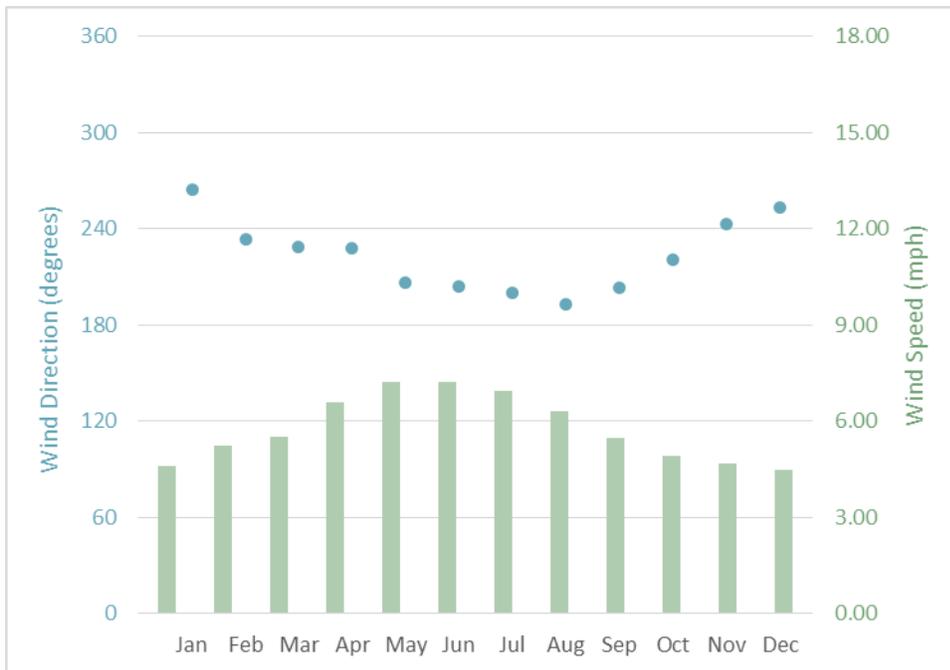


Table A-7: Monthly Average Wind Speed & Direction

Month	Wind Direction (Degrees)	Wind Speed (mph)
Jan	264	4.60
Feb	234	5.22
Mar	229	5.51
Apr	228	6.59
May	207	7.24
Jun	204	7.24
Jul	200	6.96
Aug	193	6.30
Sep	203	5.48
Oct	221	4.90
Nov	243	4.70
Dec	254	4.48

A4 Ambient PM₁₀ Trends

This section of the TSD examines ambient PM₁₀ concentrations in the Ajo area, specifically focusing on factors that contribute to higher concentrations. To examine the PM₁₀ concentration trends in the Ajo area, ADEQ looked at daily, diurnal, and seasonal averages.

A4.1 PM₁₀ Concentrations

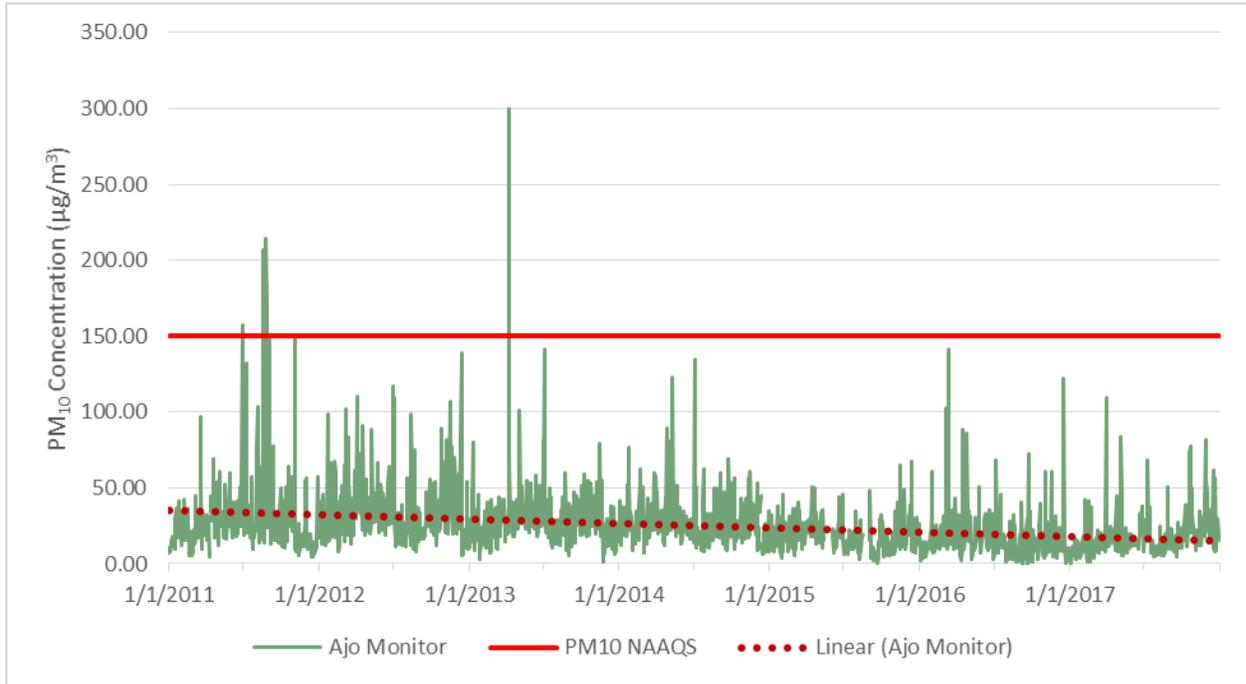
Figure A-7 shows these diurnal average concentrations for the monitor in the Ajo area that collects PM₁₀ data. The monthly averages were calculated in a similar manner; PM₁₀ concentrations were averaged for every month of the years and are presented in Figure A-8. As with the meteorological analysis, ADEQ relied on all available data from the Ajo monitor to prepare these graphs.

The following are ADEQ's comments and observations based on the analysis of this section:

- The data in the figures and tables below are based on the ADEQ continuous monitor's data from 2011 through 2017.
- There were a handful of exceedances that occurred between 2011 and 2013 (Figure A-6), which are further analyzed in Section A4.3 below.
- PM₁₀ concentrations appear to spike during the early morning hours at the Ajo monitor (Figure A-7); a time period when inversion conditions are strongest and emission related activities begin to increase.
- No clear correlation exists between season and PM₁₀ concentration (Figure A-8).
- Monthly average concentrations have been declining over the past few years, most likely from the closure of Minerals Research & Recovery Inc. and the stabilization of the slag area in 2015 (Figure A-9).

A4.1.1 Daily Average PM₁₀

Figure A-6: Daily Average PM₁₀ – Ajo



A4.1.2 Diurnal PM₁₀ Concentrations

Figure A-7: Diurnal Average PM₁₀ Concentrations



Table A-8: Diurnal Average PM₁₀ Concentrations

Hour	Average PM ₁₀ (µg/m ³)	Hour	Average PM ₁₀ (µg/m ³)
12:00 AM	25.44	12:00 PM	18.66
1:00 AM	25.02	1:00 PM	19.72
2:00 AM	24.53	2:00 PM	20.38
3:00 AM	23.88	3:00 PM	21.75
4:00 AM	24.93	4:00 PM	22.23
5:00 AM	36.66	5:00 PM	23.27
6:00 AM	35.19	6:00 PM	25.70
7:00 AM	34.79	7:00 PM	25.40
8:00 AM	30.25	8:00 PM	26.09
9:00 AM	21.03	9:00 PM	27.35
10:00 AM	18.70	10:00 PM	26.65
11:00 AM	17.49	11:00 PM	25.36

A4.1.3 Seasonal PM₁₀ Concentrations

Figure A-8: Seasonal Average PM₁₀ Concentrations

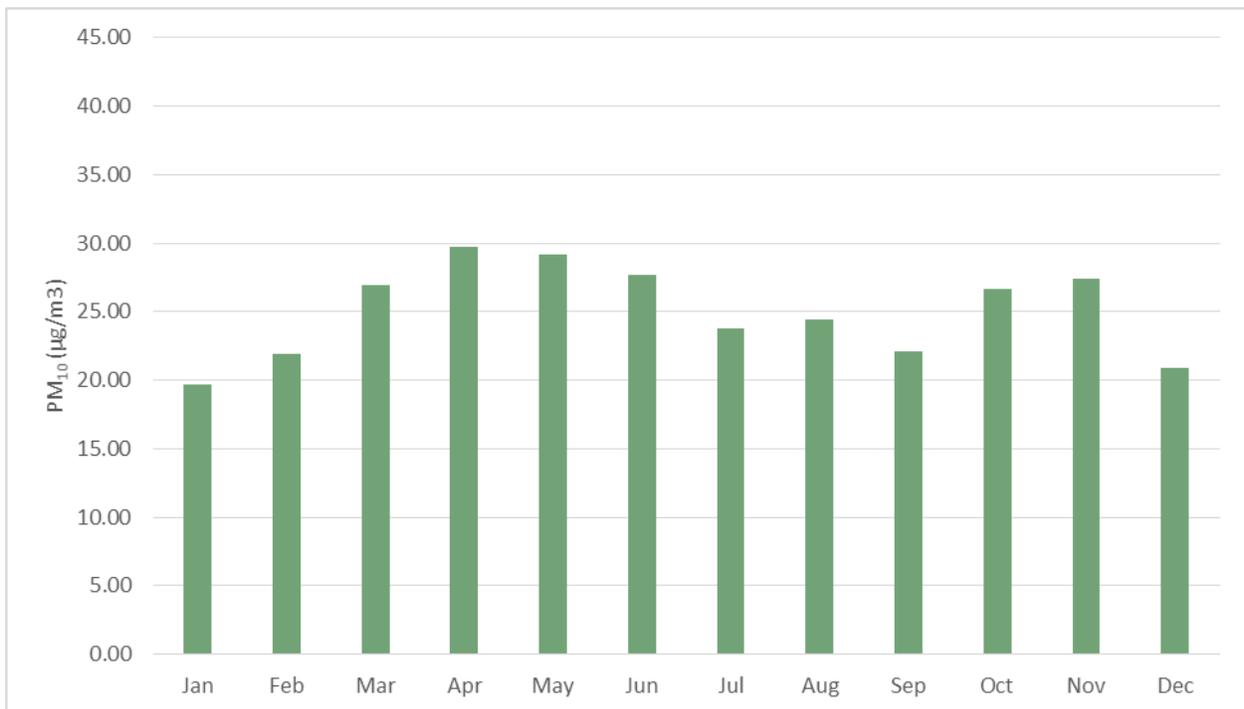


Table A-9: Seasonal Average PM₁₀ Concentrations

Month	Average PM ₁₀ (µg/m ³)
Jan	19.73
Feb	21.92
Mar	26.98
Apr	29.75
May	29.13
Jun	27.68
Jul	23.77
Aug	24.42
Sep	22.14
Oct	26.63
Nov	27.44
Dec	20.88

A4.1.4 Monthly PM₁₀ Concentrations

Figure A-9: Monthly Average PM₁₀ Concentrations

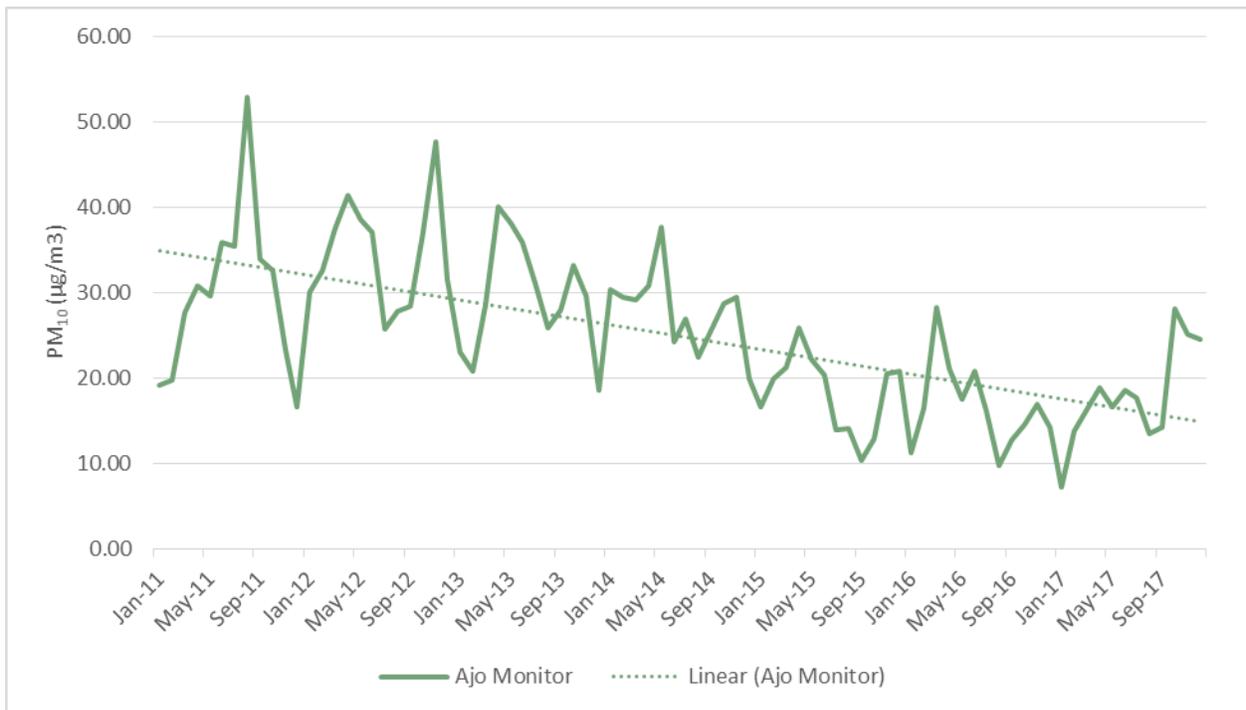


Table A-10: Monthly Average PM₁₀ Concentrations

Date	Average PM ₁₀ (µg/m ³)	Date	Average PM ₁₀ (µg/m ³)
Jan-11	19.22	Jul-14	26.92
Feb-11	19.74	Aug-14	22.51
Mar-11	27.75	Sep-14	25.61
Apr-11	30.87	Oct-14	28.74
May-11	29.65	Nov-14	29.52
Jun-11	36.01	Dec-14	20.02
Jul-11	35.52	Jan-15	16.67
Aug-11	52.91	Feb-15	19.96
Sep-11	33.96	Mar-15	21.35
Oct-11	32.64	Apr-15	25.94
Nov-11	23.41	May-15	22.14
Dec-11	16.69	Jun-15	20.33
Jan-12	30.07	Jul-15	13.91
Feb-12	32.66	Aug-15	14.15
Mar-12	37.58	Sep-15	10.41
Apr-12	41.53	Oct-15	12.90
May-12	42.52	Nov-15	20.53
Jun-12	37.18	Dec-15	20.85
Jul-12	25.74	Jan-16	11.27
Aug-12	27.91	Feb-16	16.49
Sep-12	28.43	Mar-16	28.34
Oct-12	37.08	Apr-16	21.18
Nov-12	47.75	May-16	17.59
Dec-12	31.63	Jun-16	20.91
Jan-13	23.02	Jul-16	16.16
Feb-13	20.84	Aug-16	9.78
Mar-13	28.60	Sep-16	12.78
Apr-13	40.08	Oct-16	14.52
May-13	38.17	Nov-16	16.96
Jun-13	35.98	Dec-16	14.31
Jul-13	31.20	Jan-17	7.25
Aug-13	25.98	Feb-17	13.78

Date	Average PM ₁₀ (µg/m ³)	Date	Average PM ₁₀ (µg/m ³)
Sep-13	28.01	Mar-17	16.37
Oct-13	33.25	Apr-17	18.98
Nov-13	29.64	May-17	16.62
Dec-13	18.67	Jun-17	18.64
Jan-14	30.45	Jul-17	17.66
Feb-14	29.45	Aug-17	13.46
Mar-14	29.21	Sep-17	14.32
Apr-14	30.80	Oct-17	28.15
May-14	37.69	Nov-17	25.20
Jun-14	24.31	Dec-17	24.62

A4.2 PM₁₀ & Wind Speed

To help determine the sources contributing to PM₁₀ in the Ajo area, ADEQ examined correlations between wind speed and monitored PM₁₀ concentrations. Non-anthropogenic sources of PM₁₀ generally contribute to ambient concentrations during high-wind conditions while anthropogenic sources are expected to occur regardless of wind conditions. The following figures graph wind speeds and their corresponding PM₁₀ concentration as recorded at the monitoring site in the Ajo area.

The following are ADEQ's comments and observations on these figures:

- The data in the figures and tables below are based on the ADEQ continuous monitor's data from 2011 through 2017.
- Ajo data is expressed as 1-hr averages.
- Removed wind speed and PM₁₀ data unless both data points were valid numbers, including all instances of "NAN", "BA", and negative values.
- Grouped wind speed and wind direction values into three bins based on PM₁₀ concentration: 0-75 µg/m³, 75-150 µg/m³, and 150+ µg/m³.
- Used a polar plot to graph the wind speeds and wind directions of each binned group.
- Overall mid to high observed PM₁₀ concentrations (75 – 150+ µg/m³) only account for 5.21% of all observed PM₁₀ concentrations, indicating that an exceedance is very unlikely (see Table A-12).
- The majority of observed PM₁₀ concentrations above 150 µg/m³ are observed during low to mid wind (0-10 mph) conditions, with winds from the south (see Figure A-10). Winds from the south would have blown straight over the slag re-processing area during

its operation, contributing to the exceedances. Additionally, the majority of observed PM₁₀ concentrations above 150 µg/m³ occurred from 2011-2013 when the slag re-processing facility was operating⁴.

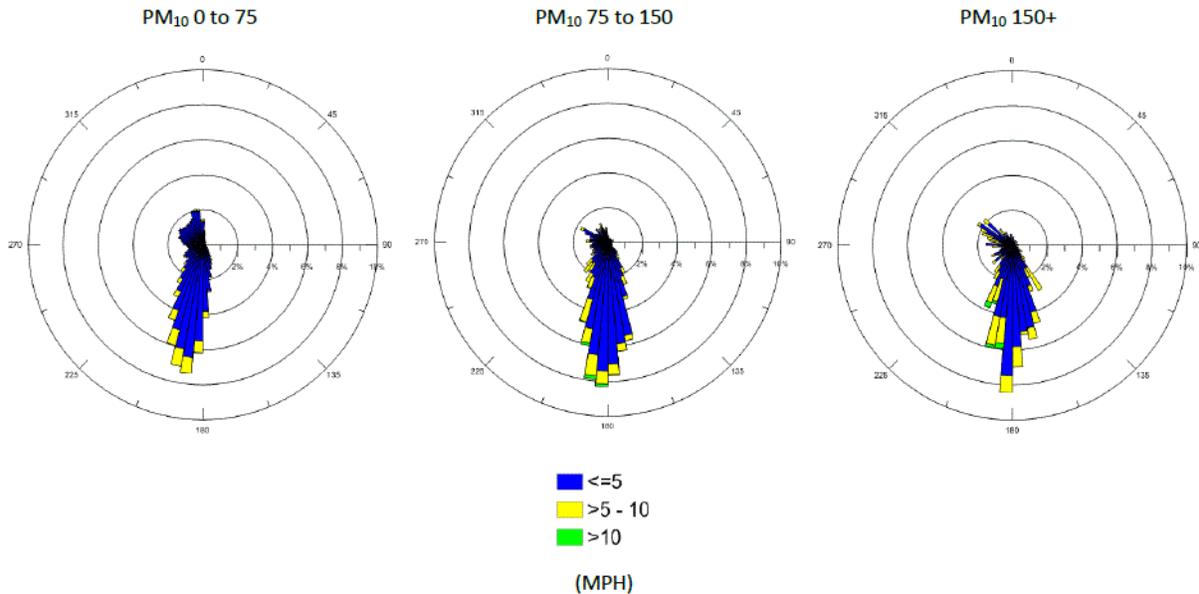
Table A-11: Observation Count by Wind Speed and PM₁₀ Bin

PM ₁₀ Bin	Wind Speed (mph)		
	0-5	5-10	10+
0-75 µg/m ³	51,428	4,246	6
75-150 µg/m ³	1,825	296	15
150+ µg/m ³	501	137	11

Table A-12: Observations by PM₁₀ Bin

PM ₁₀ Bin	Count	Percent
0-75 µg/m ³	55,680	95.24%
75-150 µg/m ³	2,136	3.65%
150+ µg/m ³	649	1.11%

Figure A-10: Wind Roses



⁴ The slag re-processing facility ceased operations in 2014 and completed stabilization in 2015.

A4.3 Exceedance Days

In order to better understand the nature of the exceedance events, ADEQ examined average and maximum wind speed data for exceedance days (Table A-13). ADEQ examined the meteorological data available from the Ajo site on exceedance days and created the wind rose graph shown in Figure A-11. This graph shows that during the exceedance days examined (1/1/2011-12/30/2017), high winds were predominantly from the south-southwest. The slag reprocessing facility that was in operation during the time is located across the road and to the south of the Ajo monitor (see Figure A-12). Additionally, there are two types of weather patterns associated with these exceedances, a low-pressure system/trough or an active monsoon pattern. The low-pressure system/trough causes strong winds ahead of the frontal passage, increasing windblown dust emissions, while the monsoon pattern creates strong wind outflows that increase windblown dust emissions.

Table A-13: Wind Speed & Direction, Exceedance Days

Date	24-hr Average (µg/m ³)	Avg Wind Speed (mph)	Max Wind Speed (mph)	Avg Wind Direction (degrees)	Weather Pattern
06/29/2011	157	12.44	27.72	194	Pre-Frontal
08/18/2011	206	8.85	32.84	185	Monsoon
08/26/2011	213	5.52	28.23	179	Monsoon
08/27/2011	167	7.22	46.17	214	Monsoon
04/08/2013	299	16.64	44.58	209	Pre-Frontal

Figure A-11: Ajo Wind Rose, Exceedance Days 2011-2017

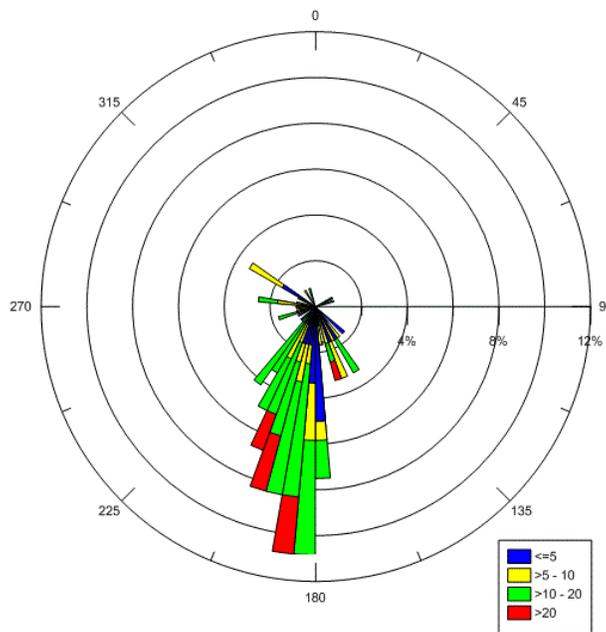
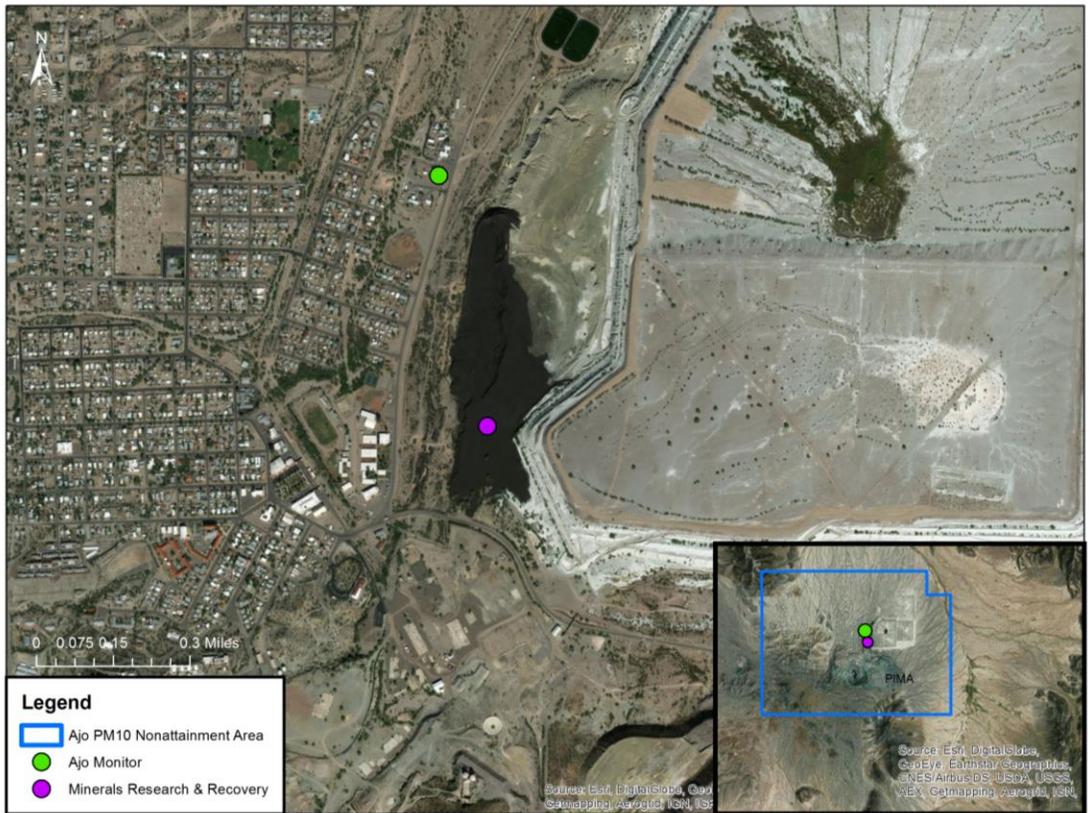


Figure A-12: Monitor Location in Relation to Slag Reprocessing Facility



A5 Emission Inventory

A summary of the Ajo PM₁₀ emission inventory is provided below in Figure A-13 and Table A-14. This summary details the annual PM₁₀ totals (in tons) for 2011, the base year 2014, and provides projected future emissions for years 2016, 2021, 2026, and 2031. For ease of review this summary provides emissions for only four, high-level categories: point⁵, nonpoint, windblown, and mobile. Further sections of this TSD provide greater levels of detail for each of these categories.

Figure A-13: Ajo PM₁₀ Emission Summary

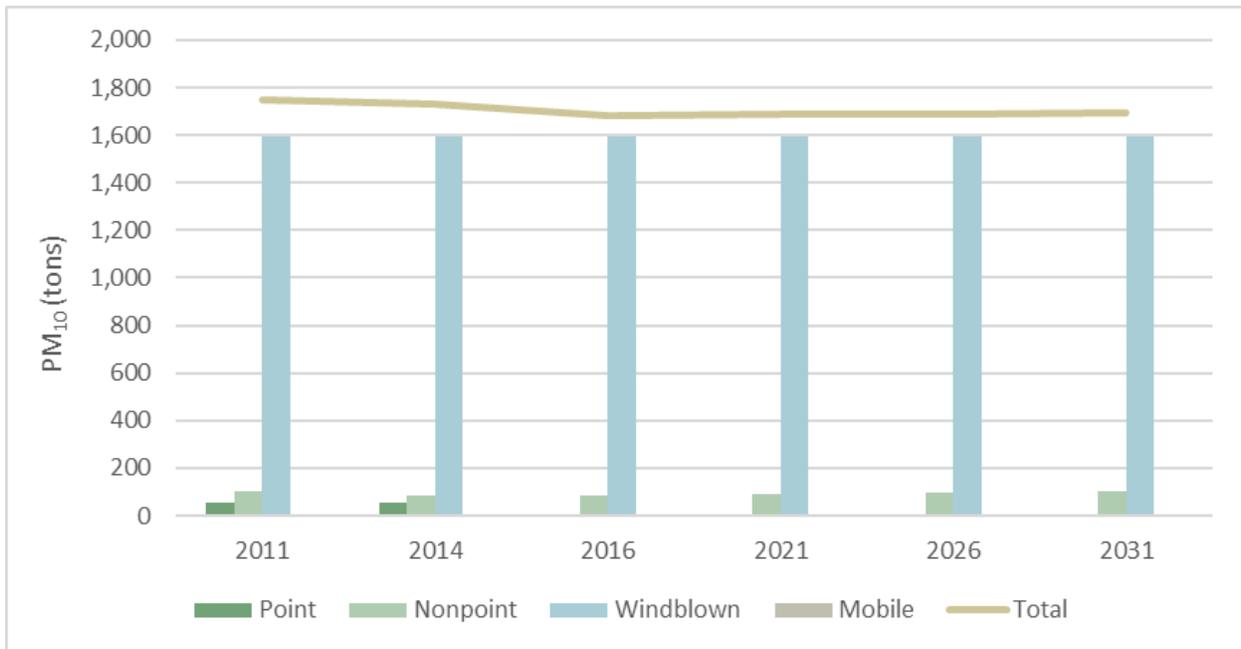


Table A-14: Emission Summary

Source	2011	2014	2016	2021	2026	2031
Point	51.86	51.86	0.41	0.41	0.41	0.41
Nonpoint	101.24	85.33	85.82	91.17	95.98	100.56
Windblown	1,592.73	1,592.73	1,592.73	1,592.73	1,592.73	1,592.73
Mobile	1.53	1.38	1.39	1.42	1.50	1.56
Total	1,747.35	1,731.29	1,680.35	1,685.73	1,690.61	1,695.26

⁵ For the purposes of this document, a point source is defined as a large, stationary (non-mobile), identifiable source of emissions. This definition includes major and minor permitted sources by state and local agencies, as well as other non-permitted sources such as airports, EGUs, and landfills. All fugitive (excluding windblown) and non-fugitive emissions attributable to a point source, as defined above, are included as that point source's inventory.

A5.1 Precursor Compounds

ADEQ did not include estimates of PM₁₀ precursor compounds in the emission inventory for the Ajo area. The Ajo area does not include any major sources of SO₂, NO_x, VOCs, or ammonia, and other sources of these emissions are not expected to be significant. Additionally, there are no major sources of condensable PM in the area, so condensable PM will not be included in the emission inventory.

A5.1.1 NO_x

To estimate NO_x emissions in the Ajo PM₁₀ NAA, ADEQ examined NO_x emissions for Pima County from the 2014 NEIv1 (see Figure A-14). Mobile NO_x accounts for much of the Pima County NO_x inventory. However, the Ajo area has a very small population (0.3% of Pima County's population) and minor thru traffic on State Route 85. Therefore, ADEQ expects there to be very limited NO_x associated with mobile sources in the Ajo area.

ADEQ also examined fire data and based on the event-level fire data in 2014 (see A5.3.1.3), ADEQ estimates that the NO_x total due to fires is zero since there were no fires in the NAA. Even fires within 25 miles of the Ajo area only produced 0.10 tons of NO_x, which is negligible.

The NO_x contributions from the remaining sources (fuel combustion, industrial processes, biogenic, waste disposal, and miscellaneous) in the Ajo area are likewise expected to represent but a fraction of the Pima County totals, and as such aren't expected to provide significant amounts of NO_x to the ambient air. These minimal amounts of NO_x emissions in the Ajo area will not lead to a significant increase in PM₁₀ formation.

Figure A-14: 2014NEI NO_x Pima County

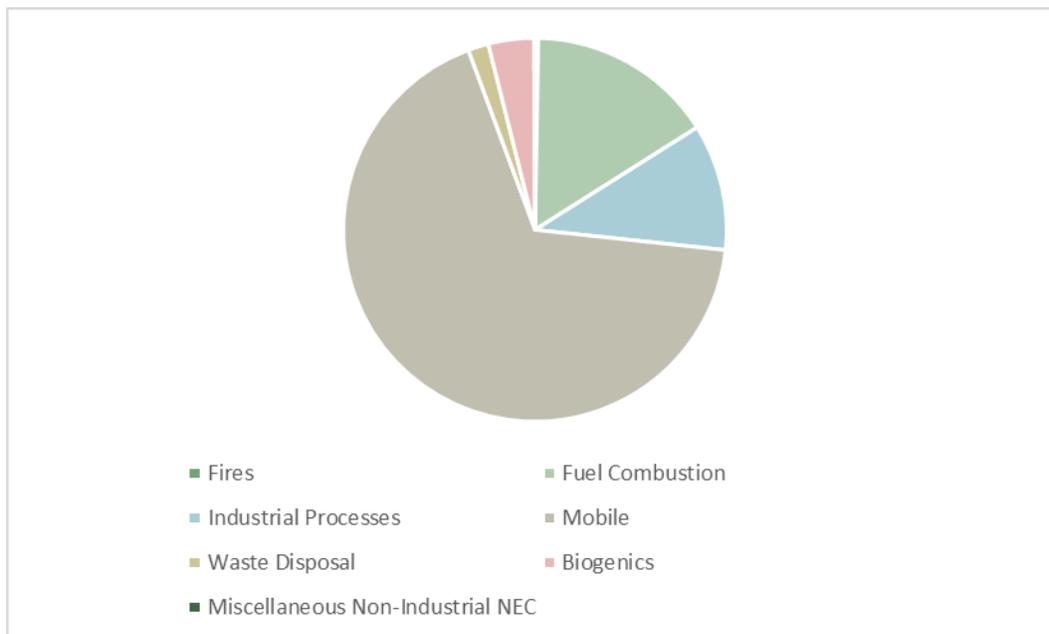


Table A-15: Pima County NO_x Emissions

Source	Pima County (tons)	NAA Estimate (tons)
Mobile	13,982.27	18.62
Fires	57.20	0.00
Biogenic	795.35	4.07
Industrial Processes	2,201.80	7.20
Fuel Combustion	3,256.62	10.65
Waste Disposal	358.23	1.17
Miscellaneous Non-Industrial NEC	15.83	0.05

Estimate Methodologies

- *Mobile* – NEI/NAA ratio of 750.87. Calculated by comparing mobile emissions in NEI to NAA-specific mobile estimates from MOVES.
- *Fires* – Sum of event-level fire data from NEI for NAA.
- *Biogenic* – Pima County/NAA land area ratio of 195.23.
- *All other categories* – Pima County/NAA population ratio (2014) of 305.67.

A5.1.2 SO₂

To estimate SO₂ emissions in the Ajo PM₁₀ area, ADEQ examined SO₂ emissions for Pima County from the 2014NEIv1 (see Figure A-15). Fuel combustion SO₂ accounts for much of the Pima county SO₂ inventory. However, the Ajo area has a very small population, and therefore, ADEQ expects there to be very limited SO₂ associated with fuel combustion in the Ajo area.

ADEQ also examined fire data and based on the event-level fire data in 2014 (see A5.3.1.3), ADEQ estimates that the SO₂ total due to fires is zero since there were no fires in the NAA. Even fires within 25 miles of the Ajo area only produced 0.04 tons of SO₂, which is negligible.

The SO₂ contributions from the remaining sources (industrial processes, mobile, and waste disposal) in the Ajo area are likewise expected to represent but a fraction of the Pima County totals, and as such aren't expected to provide significant amounts of SO₂ to the ambient air. These minimal amounts of SO₂ emissions in the Ajo area will not lead to a significant increase in PM₁₀ formation.

Figure A-15: 2014NEI SO₂ Pima County

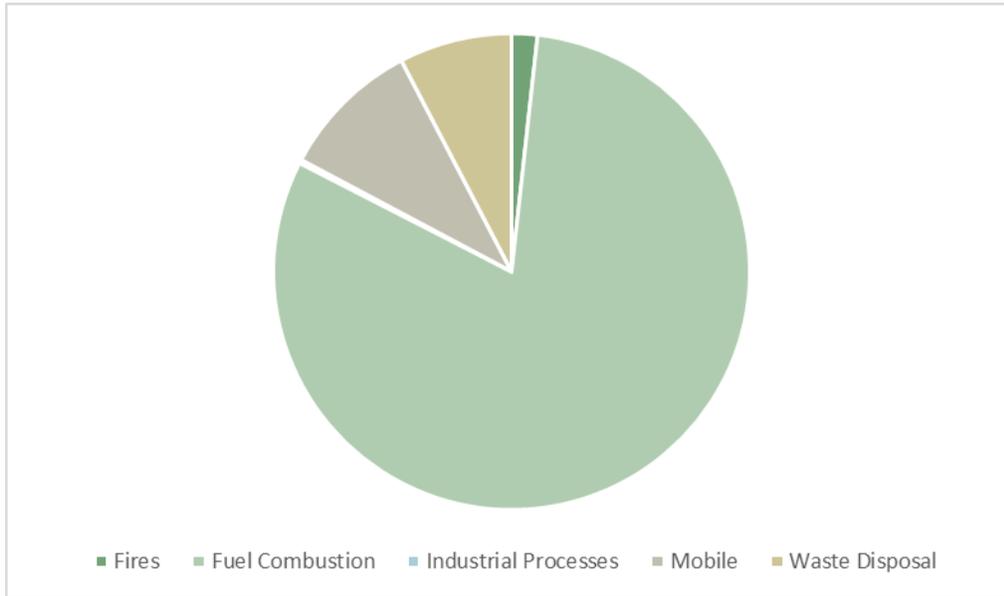


Table A-16: Pima County SO₂ Emissions

Source	Pima County (tons)	NAA Estimate (tons)
Mobile	143.85	0.19
Fires	26.28	0.00
Industrial Processes	3.64	0.01
Fuel Combustion	1,215.45	3.98
Waste Disposal	115.27	0.38

Estimate Methodologies

- *Mobile* – NEI/NAA ratio of 750.87. Calculated by comparing mobile emissions in NEI to NAA-specific mobile estimates from MOVES.
- *Fires* – Sum of event-level fire data from NEI for NAA.
- *All other categories* – Pima County/NAA population ratio (2014) of 305.67.

A5.1.3 Ammonia

To estimate ammonia emissions in the Ajo PM₁₀ area, ADEQ examined ammonia emissions for Pima County from the 2014NEIv1 (see Figure A-16). Agricultural ammonia accounts for much of the Pima county ammonia inventory. However, the Ajo area has very limited agricultural activity, with only 6.40 acres (0.02% of the NAA) devoted to cropland (see Table A-47). Therefore, ADEQ expects there to be very limited ammonia associated with agriculture in the Ajo area.

ADEQ also examined fire data and based on the event-level fire data in 2014 (see A5.3.1.3), ADEQ estimates that the ammonia total due to fires is zero since there were no fires in the NAA. Even fires within 25 miles of the Ajo area only produced 0.06 tons of ammonia, which is negligible.

The ammonia contributions from the remaining sources (fuel combustion, industrial processes, mobile, and waste disposal) in the Ajo area are likewise expected to represent but a fraction of the Pima County totals, and as such aren't expected to provide significant amounts of ammonia to the ambient air. These minimal amounts of ammonia emissions in the Ajo area will not lead to a significant increase in PM₁₀ formation.

Figure A-16: 2014NEI Ammonia Pima County

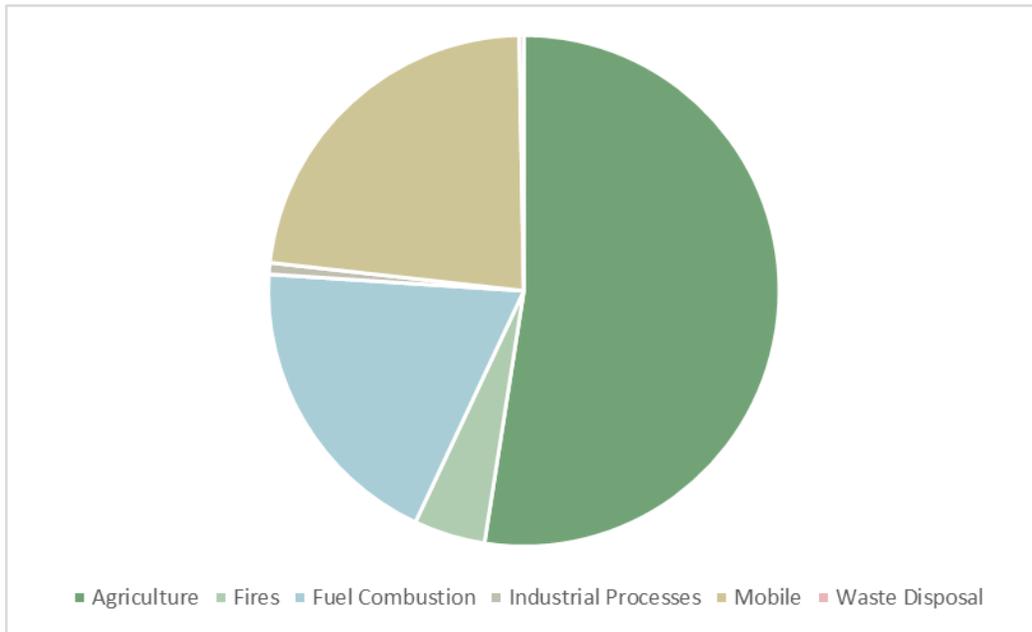


Table A-17: Pima County Ammonia Emissions

Source	Pima County (tons)	NAA Estimate (tons)
Agriculture	506.95	0.09
Fires	43.59	0.00
Fuel Combustion	184.07	0.60
Industrial Processes	7.00	0.02
Mobile	221.89	0.30
Waste Disposal	2.71	0.01

Estimate Methodologies

- Agriculture – Pima County/NAA cropland ratio of 5,436.36.
- *Mobile* – NEI/NAA ratio of 750.87. Calculated by comparing mobile emissions in NEI to NAA-specific mobile estimates from MOVES.
- *Fires* – Sum of event-level fire data from NEI for NAA.

- *All other categories* – Pima County/NAA population ratio (2014) of 305.67.

A5.1.4 VOCs

To estimate VOC emissions in the Ajo PM₁₀ NAA, ADEQ examined VOC emissions for Pima County from the 2014 NEIv1 (see Figure A-17). Biogenic VOC accounts for much of the Pima County VOC inventory, and come from the natural vegetation of the area.

After biogenic emissions, Solvent VOC accounts for much of the Pima County VOC inventory. However, the Ajo area has a very small population (0.3% of Pima County’s population) and no major industries that utilize solvents. Therefore, ADEQ expects there to be very limited VOC associated with solvent sources in the Ajo area.

ADEQ also examined fire data and based on the event-level fire data in 2014 (see A5.3.1.3), ADEQ estimates that the VOC total due to fires is zero since there were no fires in the NAA. Even fires within 25 miles of the Ajo area only produced 0.85 tons of VOC, which is negligible.

The VOC contributions from the remaining sources (mobile, fuel combustion, gas stations, and waste disposal) in the Ajo area are likewise expected to represent but a fraction of the Pima County totals, and as such aren’t expected to provide significant amounts of VOC to the ambient air. These minimal amounts of VOC emissions in the Ajo area will not lead to a significant increase in PM₁₀ formation.

Figure A-17: 2014NEI VOCs Pima County

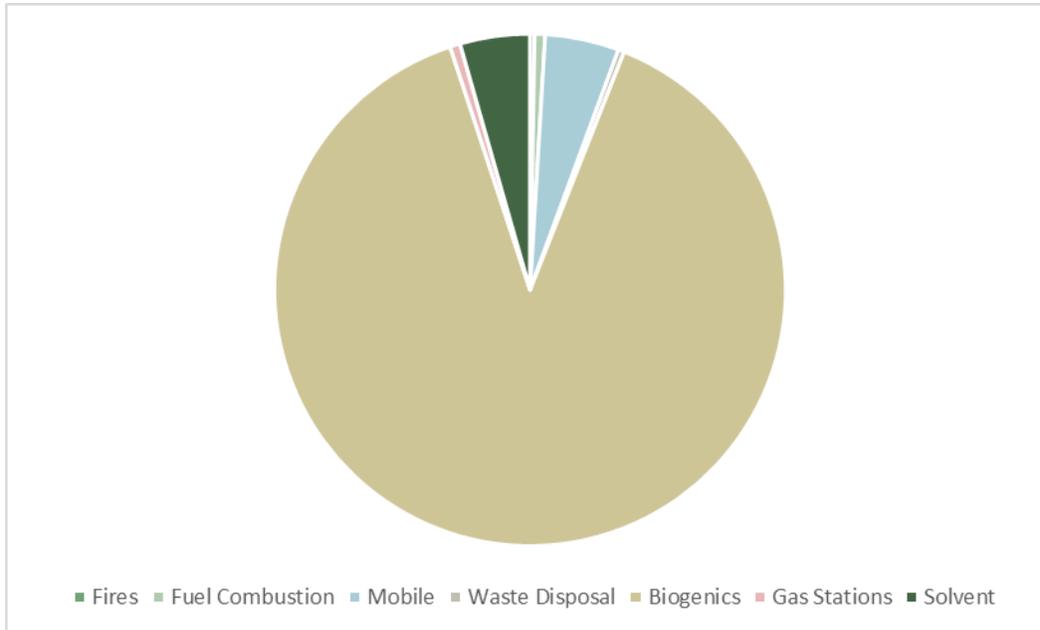


Table A-18: Pima County VOC Emissions

Source	Pima County (tons)	NAA Estimate (tons)
Biogenics	194,918.00	998.41
Fires	626.66	0.00
Fuel Combustion	1,448.39	4.74
Solvent	9,705.47	31.75
Mobile	10,255.83	13.66
Waste Disposal	815.93	2.67
Gas Stations	1,401.15	4.58

Estimate Methodologies

- Biogenics – Pima County/NAA land ratio of 195.23.
- *Mobile* – NEI/NAA ratio of 750.87. Calculated by comparing mobile emissions in NEI to NAA-specific mobile estimates from MOVES.
- *Fires* – Sum of event-level fire data from NEI for NAA.
- *All other categories* – Pima County/NAA population ratio (2014) of 305.67.

A5.2 Point Source Inventory

Pima County Department of Environmental Quality (PCDEQ) has jurisdiction over permitting air quality matters in the Ajo PM₁₀ area. There are only two sources currently permitted in the area by PCDEQ, both of which are facilities permitted to operate diesel fired emergency generators and detailed in Table A-19. These three permitted sources do not have any actual emissions reported. In addition to the three permitted emergency generators, there is also a landfill in the Ajo area. This landfill is not permitted and does not report emissions because it falls below the permitting threshold for Pima County. Emissions for the Ajo landfill were estimated by scaling down emissions from a larger permitted facility in Pima County, based on waste acceptance rates for each facility (Table A-20).

Table A-19: Permitted Point Sources

Facility	Equipment	Permitting Agency	ATO #
Freeport-McMoRan – Childs Well Field	Emergency Generator	PCDEQ	6120-01
U.S. Department of Homeland Security – Custom and Border Protection Housing	Emergency Generator 1	PCDEQ	6162-1
	Emergency Generator 2	PCDEQ	6162-2

Table A-20: Landfill Emissions

Landfill	Waste Acceptance Rate (tpy)	PM10 Emissions PTE (tpy)
Los Reales Landfill	551,920	72.44
Marana Landfill	328,500	57.02
Ajo Landfill	2,701	Not permitted
Ajo/Los Reales	0.005	0.36
Ajo/Marana	0.008	0.47
Average Estimated PM10 Emissions for Ajo Landfill		0.41

A5.2.1 Historic Point Sources

While there are no point sources currently permitted in the Ajo PM₁₀ area, there have been a few significant sources in the past (see Figure A-18).

Open pit copper mining had been previously conducted for more than 60 years at the Phelps Dodge (now Freeport-McMoRan) New Cornelia mine in Ajo, Arizona. The mine stopped production in the mid to late 1980s, with the smelter ceasing as well. The smelter buildings were then dismantled in the 1990s.

After the mine and smelter closed, the tailings impoundment became the main source of emissions in the Ajo area. The tailings impoundment is about 1,900 acres total, with about 820 acres of it vegetated. Between May 1990 and October 1991 the tailings impoundment was armored with crushed rock, covering about 85% of the total area, leading to a 90% emissions

reduction. ADEQ had a 1991 inventory created that illustrated this reduction of emissions (see Table A-21).

Table A-21: 1991 ADEQ Ajo Windblown Emission Inventory

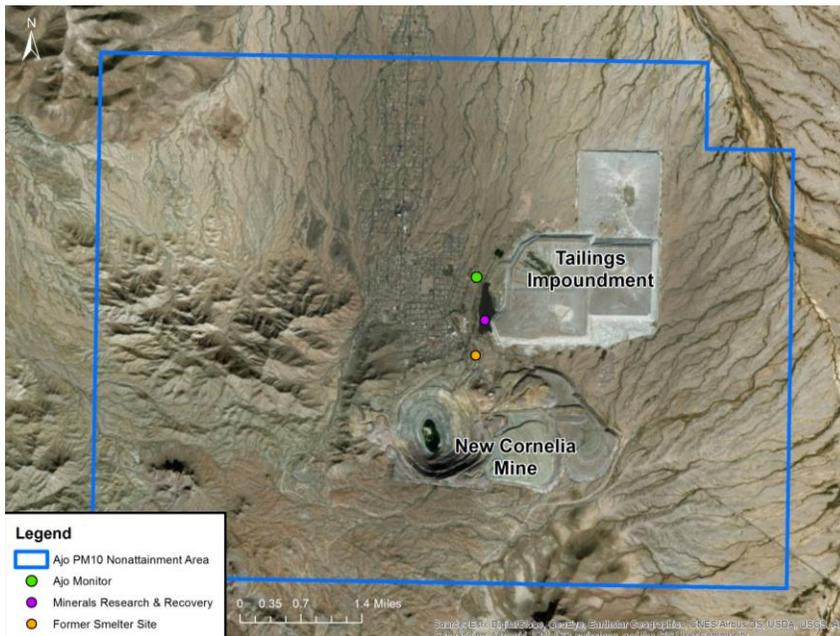
	Pre-Capping Emissions (tpy)	Post-Capping Emissions (tpy)
Tailings Impoundment	112	11

Minerals Research and Recovery, Inc. (MRRI) began reprocessing the old mine’s slag pile to manufacture roofing granules and abrasives in the late 1990s after the mine shut down operation. The permit for this operation was renewed in 2006, allowing the operation a PTE of 51.45 tpy. While reported actual emissions for the source in 2005-2007 were much less than the allowed PTE (see Table A-22), the source had numerous Notices of Violations from Pima County between 1997 and 2014. No emissions data was available for the years after 2007, though the facility was still operating through 2014. Because of this ADEQ will use the 2006 PTE as the 2014 base year emissions. The community in Ajo also had numerous dust complaints during this time against MRRI⁶. This source ceased operations in 2015 and stabilization of the site was completed in 2015.

Table A-22: MRRI Activity Based Emissions Data including Fugitives

	2006 PTE	2005 Actual Emissions (tons)	2006 Actual Emissions (tons)	2007 Actual Emissions (tons)
MRRI	51.45	22.43	16.75	15.40

Figure A-18: Historic Significant Sources in Ajo



⁶ Further details of these dust complaints can be found in Section 4.4.1 of the SIP document.

A5.3 Nonpoint Source Inventory

Table A-23: Emission Totals - Nonpoint

Emission Sector	PM ₁₀ (tons)					
	2011	2014	2016	2021	2026	2031
Agriculture - Crops & Livestock Dust	0.16	0.11	0.11	0.11	0.11	0.11
Commercial Cooking	0.95	0.98	0.98	1.04	1.10	1.15
Dust - Construction Dust	63.83	42.80	43.05	45.74	48.16	50.46
Dust - Paved Road Dust	6.95	4.58	4.60	4.89	5.15	5.39
Dust - Unpaved Road Dust	24.89	28.20	28.37	30.14	31.73	33.24
Dust – Windblown from Vacant Land ⁷	1,592.73	1,592.73	1,592.73	1,592.73	1,592.73	1,592.73
Fires - Agricultural Field Burning	0.00	0.00	0.00	0.00	0.00	0.00
Fires - Prescribed Fires	0.40	0.00	0.00	0.00	0.00	0.00
Fires – Wildfires	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Comb - Comm/Institutional - Biomass	0.17	0.05	0.05	0.05	0.05	0.05
Fuel Comb - Comm/Institutional - Coal	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Comb - Comm/Institutional - Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Comb - Comm/Institutional - Oil	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Comb - Electric Generation - Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Comb - Electric Generation - Oil	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Comb - Industrial Boilers, ICEs - Biomass	0.00	0.02	0.02	0.02	0.02	0.02
Fuel Comb - Industrial Boilers, ICEs - Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Comb - Industrial Boilers, ICEs - Oil	0.00	0.16	0.16	0.17	0.18	0.19
Fuel Comb - Industrial Boilers, ICEs - Other	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Comb - Residential - Natural Gas	0.01	0.01	0.01	0.01	0.01	0.01
Fuel Comb - Residential – Oil	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Comb - Residential - Other	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Comb - Residential - Wood	3.50	3.46	3.48	3.70	3.90	4.08
Industrial Processes - Chemical Manuf	0.00	0.00	0.00	0.00	0.00	0.00
Industrial Processes – Mining ⁸	0.00	0.00	0.00	0.00	0.00	0.00
Industrial Processes - NEC	0.00	0.03	0.03	0.03	0.04	0.04
Industrial Processes - Non-ferrous Metals	0.00	0.00	0.00	0.00	0.00	0.00
Industrial Processes - Oil & Gas Production	0.00	0.00	0.00	0.00	0.00	0.00
Industrial Processes - Pulp & Paper	0.00	0.00	0.00	0.00	0.00	0.00
Industrial Processes - Storage and Transfer	0.37	0.54	0.55	0.58	0.61	0.64
Miscellaneous Non-Industrial NEC	0.00	0.17	0.17	0.18	0.19	0.20
Solvent - Industrial Surface Coating & Solvent Use	0.00	0.00	0.00	0.00	0.00	0.00
Waste Disposal	0.00	4.20	4.22	4.49	4.72	4.95
Total	1,693.96	1,678.05	1,678.54	1,683.90	1,688.71	1,693.28

⁷ All windblown emissions were averaged from 2011-2016; this is to account for the variability in meteorology from year to year.

⁸ The mine is no longer in operation, and does not have any activity (including overburden removal, drilling and blasting, and loading and unloading activities) occurring at the site. Windblown emissions from the mine, slag dump, and tailings are included in the windblown category under non-developed land other.

A5.3.1 Emission Calculation Methodology

The calculation methodologies ADEQ used to develop the nonpoint emission inventory are summarized in Table A-24 below. The majority of the emission sectors rely on 2014 NEIv1 data as the basis for the emission totals, which are used in conjunction with allocation and projection factors to establish the nonpoint inventory for the Ajo PM₁₀ NAA. The two exceptions to this are Industrial Processes – Mining, which is assumed to be zero due to the inactive mine, and Dust – Windblown from Vacant Land, which will rely on bottom-up emission calculations.

Table A-24: Calculation Methods

Emission Sector	Calculation Method
Agriculture - Crops & Livestock Dust	2014 NEIv1
Commercial Cooking	2014 NEIv1
Dust - Construction Dust	2014 NEIv1
Dust - Paved Road Dust	2014 NEIv1
Dust - Unpaved Road Dust	2014 NEIv1
Dust – Windblown from Vacant Land	See A5.3.1.2
Fires - Agricultural Field Burning	2014 NEIv1 – See A5.3.1.3
Fires - Prescribed Fires	2014 NEIv1 – See A5.3.1.3
Fires – Wildfires	2014 NEIv1 – See A5.3.1.3
Fuel Comb - Comm/Institutional - Biomass	2014 NEIv1
Fuel Comb - Comm/Institutional - Coal	2014 NEIv1
Fuel Comb - Comm/Institutional - Natural Gas	2014 NEIv1
Fuel Comb - Comm/Institutional - Oil	2014 NEIv1
Fuel Comb - Electric Generation - Natural Gas	2014 NEIv1
Fuel Comb - Electric Generation - Oil	2014 NEIv1
Fuel Comb - Industrial Boilers, ICEs - Biomass	2014 NEIv1
Fuel Comb - Industrial Boilers, ICEs - Natural Gas	2014 NEIv1
Fuel Comb - Industrial Boilers, ICEs - Oil	2014 NEIv1
Fuel Comb - Industrial Boilers, ICEs - Other	2014 NEIv1
Fuel Comb - Residential - Natural Gas	2014 NEIv1
Fuel Comb - Residential – Oil	2014 NEIv1
Fuel Comb - Residential - Other	2014 NEIv1
Fuel Comb - Residential - Wood	2014 NEIv1
Industrial Processes - Chemical Manuf	2014 NEIv1
Industrial Processes – Mining*	N/A - See A5.3.1.1*
Industrial Processes - NEC	2014 NEIv1
Industrial Processes - Non-ferrous Metals	2014 NEIv1
Industrial Processes - Oil & Gas Production	2014 NEIv1
Industrial Processes - Pulp & Paper	2014 NEIv1
Industrial Processes - Storage and Transfer	2014 NEIv1
Miscellaneous Non-Industrial NEC	2014 NEIv1
Solvent - Industrial Surface Coating & Solvent Use	2014 NEIv1
Waste Disposal	2014 NEIv1

** Indicates allocation methodology change from Inventory Preparation Plan*

A5.3.1.1 Point/Nonpoint Reconciliation

To account for overlap between the point and nonpoint datasets, ADEQ reconciled the emission totals in the Industrial Processes – Mining nonpoint sector. After reviewing the datasets used to compile the 2014 NEIv1, ADEQ determined that this sector relies on the 2011EPA_NP_Ovrlp dataset, indicating that the emission totals overlap with point emissions. All mining emissions in the Ajo PM₁₀ nonattainment area would be attributable to point sources, including the Freeport-McMoRan Ajo mine and smelter, if they were both still operating. Since the closed Freeport-McMoRan facilities account for the only mining operations in the Ajo nonattainment area ADEQ assumed that the Industrial Processes – Mining nonpoint sector has zero emissions.

A5.3.1.2 Dust – Windblown from Vacant Land

Windblown dust from vacant land is not a source category that is included in the 2014 NEI dataset. During discussions between ADEQ and EPA Region 9, it was decided that this category should be added as it is likely that this source category constitutes a significant proportion of the overall PM₁₀ inventory. While emission factors are well established for windblown dust from vacant land, no clear methodology exists for estimating these emissions from an entire planning area. ADEQ leveraged the windblown methodology created for the 2015 West Pinal Moderate PM₁₀ Nonattainment Area SIP (henceforward referred to as the West Pinal PM₁₀ SIP) and re-used portions of that methodology where appropriate.

Summary of windblown dust emission calculation methodology:

1. Establish land use categories
2. Define how many wind events occur per year
3. Establish windblown PM₁₀ emission factors
4. Establish adjustment factors
5. Calculate emissions

Establish land use categories

Because soil stability is an important factor in windblown dust calculations, it is important to establish land use categories so that appropriate disturbed/undisturbed proportions can be estimated. The West Pinal PM₁₀ SIP established 12 land use categories, including developed rural lands, cleared areas, residential construction, and dairies. ADEQ decided to establish a similar list of land use categories that were more appropriate to the Ajo PM₁₀ area. These land use categories, along with their associated disturbed/undisturbed proportions and total land areas, are listed in Table A-25.

Table A-25: Land Use Categories

Land Category	Land Use Description	Land Area (mi ²)	Disturbed	Undisturbed
Developed Rural Lands (low density residential)	Unpaved Roads/Alleys	0.04	96%	4%
	Unpaved Parking Areas	0.00	96%	4%
	Disturbed Open Areas	0.04	90%	10%
	Other	3.44	10%	90%
Non-Developed Lands	Unpaved Roads	0.04	96%	4%
	Vacant Land & Open Areas	33.29	15%	85%
	Agriculture	0.01	18%	16%
	Other (Freeport-McMoRan)	9.76	10%	90%

Developed Rural Lands (low density residential) - Land area for this category was defined as the CDP boundary of Ajo. ADEQ assumed all land within these city boundaries are rural, low density residential. ADEQ used ArcGIS and aerial photography to categorize areas within the town of Ajo as either an unpaved road/alley, unpaved parking area, disturbed open area, or other. Descriptions of these areas are provided below.

Unpaved Roads/Alleys – A roadway or path that appeared to be well-established for the use of motor vehicles. Driveways on private residential property were not included.

Unpaved Parking Areas – Open areas that appeared to be used primarily for vehicle parking. These included unpaved areas outside of commercial establishments and recreational facilities.

Disturbed Open Areas – Open areas that appeared to be disturbed from its native state, however there was no clear indication it was being actively used for vehicle parking. Areas that were disturbed due to vehicle use (i.e. ATV or other off-road activity) were included in this category.

Other – Catch-all category for anything not explicitly categorized. Includes mainly undisturbed native desert areas and developed residential and commercial properties.

Non-Developed Lands – Land area for this category was defined as any land outside the CDP boundary of Ajo. The majority of this land is comprised of undisturbed, native desert and mountainous terrain. ADEQ used the four categories listed below to define windblown emissions from these undeveloped lands.

Unpaved Roads – ADEQ used ArcGIS to determine unpaved road area for the Ajo area, using aerial photography to categorize roads as either paved or unpaved.

Vacant Land & Open Areas – ADEQ assumed that all land was considered “vacant land” if not otherwise categorized. Additionally, un-developed portions of the Ajo CDP were included in this category, and not in developed rural lands, based on aerial photography. Since the West Pinal PM₁₀ SIP did not include a “vacant land” category, ADEQ used the disturbed/undisturbed ratio of the “cleared areas” category.

Agriculture – ADEQ relied on CropScape⁹ data to determine cropland area. The disturbed/undisturbed percentages do not sum to 100% as it takes into account crop planting, growth, and harvest schedules. More details on how these values were calculated can be found in the West Pinal PM₁₀ SIP (Arizona Department of Environmental Quality, 2015).

Other – Catch-all category for the inactive properties owned by Freeport-McMoRan. This includes the mine and smelter site, the tailing impoundment, and the slag dump.

Define Wind Events

Windblown emissions are an intermittent occurrence, only occurring during periods when winds are strong enough to entrain dust into the ambient air. For the purposes of calculating windblown emissions ADEQ defined a wind event as a period of 3 or more consecutive hours of winds exceeding 12 mph. Using wind speed data collected at the Ajo monitor, ADEQ calculated the wind event information provided in Table A-26.

Table A-26: Wind Events

Year	# Wind Events	Total High Wind (hrs)	Total High Wind (s)
2011	68	524	1,958,400
2012	56	428	1,612,800
2013	66	537	2,138,400
2014	44	248	950,400
2015	53	309	1,144,800
2016	45	303	1,134,000

Establish PM₁₀ Emission Factors

Once ADEQ had established land use categories and wind event duration, it was necessary to determine emission factors to associate with both. The West Pinal PM₁₀ SIP established PM₁₀ emission factors for both disturbed and undisturbed areas. These factors were developed using data from two monitors in the West Pinal planning area, Pinal County Housing Complex (PCH) and Stanfield (STF). These locations are approximately 60-80 miles from the Ajo PM₁₀ area (see Figure A-19), and represent the best windblown emission rate data available. Both disturbed and undisturbed emission rates were available for each monitoring location for each wind speed bin. For use in the context of Ajo PM₁₀, ADEQ took the conservative measure of using the maximum emission factor for each wind speed bin. These emission factors are presented in Table A-27.

⁹ <https://nassgeodata.gmu.edu/CropScape/>

Figure A-19: Pinal County Monitors



Table A-27: High Wind Emission Factors

Windspeed Bins (mph)	Disturbed EF (g/m ² *s)	Undisturbed EF (g/m ² *s)	Windspeed Bins (mph)	Disturbed EF (g/m ² *s)	Undisturbed EF (g/m ² *s)
12	3.06E-05	6.17E-06	22	4.27E-04	6.38E-05
13	4.89E-05	9.86E-06	23	5.05E-04	7.55E-05
14	6.58E-05	1.33E-05	24	6.04E-04	9.03E-05
15	1.04E-04	1.80E-05	25	7.18E-04	9.54E-05
16	1.15E-04	1.99E-05	26	8.87E-04	1.18E-04
17	1.48E-04	2.57E-05	27	9.92E-04	1.32E-04
18	1.84E-04	3.19E-05	28	1.16E-03	1.54E-04
19	2.35E-04	4.07E-05	29	1.34E-03	1.78E-04
20	2.71E-04	4.05E-05	30	1.54E-03	1.86E-04
21	3.45E-04	5.15E-05			

Establish Adjustment Factors

To calculate annual windblown emissions, this methodology employs the use of a year-specific emission factor for disturbed areas and one for undisturbed areas. The formula for calculating windblown PM₁₀ emissions is provided below:

$$PM10 = EF \left(\frac{g}{m^2s} \right) * Wind\ Event\ Duration\ (s) * Effective\ Area\ (m^2)$$

Where:

- **PM10** = total PM10 emissions in grams
- **EF** = the adjusted emission factor (one for disturbed area and another for undisturbed areas)
- **Wind Event Duration** = the total duration, in seconds, of high winds during a given year
- **Effective Area** = the adjusted land area in square meters (one for disturbed areas and another for undisturbed areas).

Adjusted Emission Factors

To simplify the emission calculations, ADEQ employed the use of annual total wind event duration. This yields a single value which would need to be associated with a single emission factor in order to produce a viable emission total. However, an issue arises when trying to associate a single emission factor when emission factors are defined based on wind speed bin (see Table A-27); since wind events encompass a range of wind speeds it is inappropriate to assign a single emission factor to an entire event, let alone for an entire year's worth of events.

To resolve this issue, ADEQ employed the use of weighted average emission factors based on the annual distribution of wind speeds. An adjustment curve based on the work done in the West Pinal PM₁₀ SIP was also applied to emission factors in an attempt to account for the temporal variability in particulate emissions during sustained high wind events. These adjusted emission factors (EFs) are presented below in Table A-28 through Table A-33.

Table A-28: Adjusted Emission Factors - 2011

Wind Speed Bin (mph)	2011			
	Wind Count	Percentage	Disturbed EFs (g/m ² *s)	Undisturbed EFs (g/m ² *s)
12	138	26%	3.1E-05	6.2E-06
13	103	20%	4.9E-05	9.9E-06
14	109	21%	6.6E-05	1.3E-05
15	56	11%	1.0E-04	1.8E-05
16	26	5%	1.1E-04	2.0E-05
17	29	6%	1.5E-04	2.6E-05
18	17	3%	1.8E-04	3.2E-05
19	19	4%	2.4E-04	4.1E-05
20	12	2%	2.7E-04	4.1E-05

Wind Speed Bin (mph)	2011			
	Wind Count	Percentage	Disturbed EFs (g/m ² *s)	Undisturbed EFs (g/m ² *s)
21	2	0%	3.4E-04	5.2E-05
22	4	1%	4.3E-04	6.4E-05
23	3	1%	5.1E-04	7.6E-05
24	2	0%	6.0E-04	9.0E-05
25	4	1%	7.2E-04	9.5E-05
26	0	0%	8.9E-04	1.2E-04
27	0	0%	9.9E-04	1.3E-04
28	0	0%	1.2E-03	1.5E-04
29	0	0%	1.3E-03	1.8E-04
30	0	0%	1.5E-03	1.9E-04
Adjusted EFs			5.17E-05	9.12E-06

Table A-29: Adjusted Emission Factors - 2012

Wind Speed Bin (mph)	2012			
	Wind Count	Percentage	Disturbed EFs (g/m ² *s)	Undisturbed EFs (g/m ² *s)
12	92	21%	3.1E-05	6.2E-06
13	72	17%	4.9E-05	9.9E-06
14	80	19%	6.6E-05	1.3E-05
15	36	8%	1.0E-04	1.8E-05
16	42	10%	1.1E-04	2.0E-05
17	34	8%	1.5E-04	2.6E-05
18	24	6%	1.8E-04	3.2E-05
19	19	4%	2.4E-04	4.1E-05
20	7	2%	2.7E-04	4.1E-05
21	9	2%	3.4E-04	5.2E-05
22	8	2%	4.3E-04	6.4E-05
23	1	0%	5.1E-04	7.6E-05
24	3	1%	6.0E-04	9.0E-05
25	0	0%	7.2E-04	9.5E-05
26	0	0%	8.9E-04	1.2E-04
27	1	0%	9.9E-04	1.3E-04
28	0	0%	1.2E-03	1.5E-04
29	0	0%	1.3E-03	1.8E-04
30	0	0%	1.5E-03	1.9E-04
Adjusted EFs			6.58E-05	1.15E-05

Table A-30: Adjusted Emission Factors - 2013

Wind Speed Bin (mph)	2013			
	Wind Count	Percentage	Disturbed EFs (g/m ² *s)	Undisturbed EFs (g/m ² *s)
12	123	23%	3.1E-05	6.2E-06
13	88	16%	4.9E-05	9.9E-06
14	107	20%	6.6E-05	1.3E-05
15	67	12%	1.0E-04	1.8E-05
16	39	7%	1.1E-04	2.0E-05
17	43	8%	1.5E-04	2.6E-05
18	22	4%	1.8E-04	3.2E-05
19	22	4%	2.4E-04	4.1E-05
20	8	1%	2.7E-04	4.1E-05
21	8	1%	3.4E-04	5.2E-05
22	2	0%	4.3E-04	6.4E-05
23	5	1%	5.1E-04	7.6E-05
24	1	0%	6.0E-04	9.0E-05
25	2	0%	7.2E-04	9.5E-05
26	0	0%	8.9E-04	1.2E-04
27	0	0%	9.9E-04	1.3E-04
28	0	0%	1.2E-03	1.5E-04
29	0	0%	1.3E-03	1.8E-04
30	0	0%	1.5E-03	1.9E-04
Adjusted EFs			5.47E-05	9.65E-06

Table A-31: Adjusted Emission Factors - 2014

Wind Speed Bin (mph)	2014			
	Wind Count	Percentage	Disturbed EFs (g/m ² *s)	Undisturbed EFs (g/m ² *s)
12	83	33%	3.1E-05	6.2E-06
13	62	25%	4.9E-05	9.9E-06
14	41	17%	6.6E-05	1.3E-05
15	26	10%	1.0E-04	1.8E-05
16	12	5%	1.1E-04	2.0E-05
17	14	6%	1.5E-04	2.6E-05
18	5	2%	1.8E-04	3.2E-05
19	1	0%	2.4E-04	4.1E-05
20	2	1%	2.7E-04	4.1E-05
21	2	1%	3.4E-04	5.2E-05
22	0	0%	4.3E-04	6.4E-05
23	0	0%	5.1E-04	7.6E-05

Wind Speed Bin (mph)	2014			
	Wind Count	Percentage	Disturbed EFs (g/m ² *s)	Undisturbed EFs (g/m ² *s)
24	0	0%	6.0E-04	9.0E-05
25	0	0%	7.2E-04	9.5E-05
26	0	0%	8.9E-04	1.2E-04
27	0	0%	9.9E-04	1.3E-04
28	0	0%	1.2E-03	1.5E-04
29	0	0%	1.3E-03	1.8E-04
30	0	0%	1.5E-03	1.9E-04
Adjusted EFs			4.17E-05	7.73E-06

Table A-32: Adjusted Emission Factors - 2015

Wind Speed Bin (mph)	2015			
	Wind Count	Percentage	Disturbed EFs (g/m ² *s)	Undisturbed EFs (g/m ² *s)
12	98	32%	3.1E-05	6.2E-06
13	69	22%	4.9E-05	9.9E-06
14	55	18%	6.6E-05	1.3E-05
15	36	12%	1.0E-04	1.8E-05
16	23	7%	1.1E-04	2.0E-05
17	13	4%	1.5E-04	2.6E-05
18	6	2%	1.8E-04	3.2E-05
19	6	2%	2.4E-04	4.1E-05
20	1	0%	2.7E-04	4.1E-05
21	1	0%	3.4E-04	5.2E-05
22	1	0%	4.3E-04	6.4E-05
23	0	0%	5.1E-04	7.6E-05
24	0	0%	6.0E-04	9.0E-05
25	0	0%	7.2E-04	9.5E-05
26	0	0%	8.9E-04	1.2E-04
27	0	0%	9.9E-04	1.3E-04
28	0	0%	1.2E-03	1.5E-04
29	0	0%	1.3E-03	1.8E-04
30	0	0%	1.5E-03	1.9E-04
Adjusted EFs			3.96E-05	7.33E-06

Table A-33: Adjusted Emission Factors - 2016

Wind Speed Bin (mph)	2016			
	Wind Count	Percentage	Disturbed EFs (g/m ² *s)	Undisturbed EFs (g/m ² *s)
12	89	29%	3.1E-05	6.2E-06
13	66	22%	4.9E-05	9.9E-06
14	57	19%	6.6E-05	1.3E-05
15	42	14%	1.0E-04	1.8E-05
16	22	7%	1.1E-04	2.0E-05
17	14	5%	1.5E-04	2.6E-05
18	6	2%	1.8E-04	3.2E-05
19	1	0%	2.4E-04	4.1E-05
20	4	1%	2.7E-04	4.1E-05
21	1	0%	3.4E-04	5.2E-05
22	0	0%	4.3E-04	6.4E-05
23	0	0%	5.1E-04	7.6E-05
24	1	0%	6.0E-04	9.0E-05
25	0	0%	7.2E-04	9.5E-05
26	0	0%	8.9E-04	1.2E-04
27	0	0%	9.9E-04	1.3E-04
28	0	0%	1.2E-03	1.5E-04
29	0	0%	1.3E-03	1.8E-04
30	0	0%	1.5E-03	1.9E-04
Adjusted EFs			4.47E-05	8.21E-06

Effective Land Area

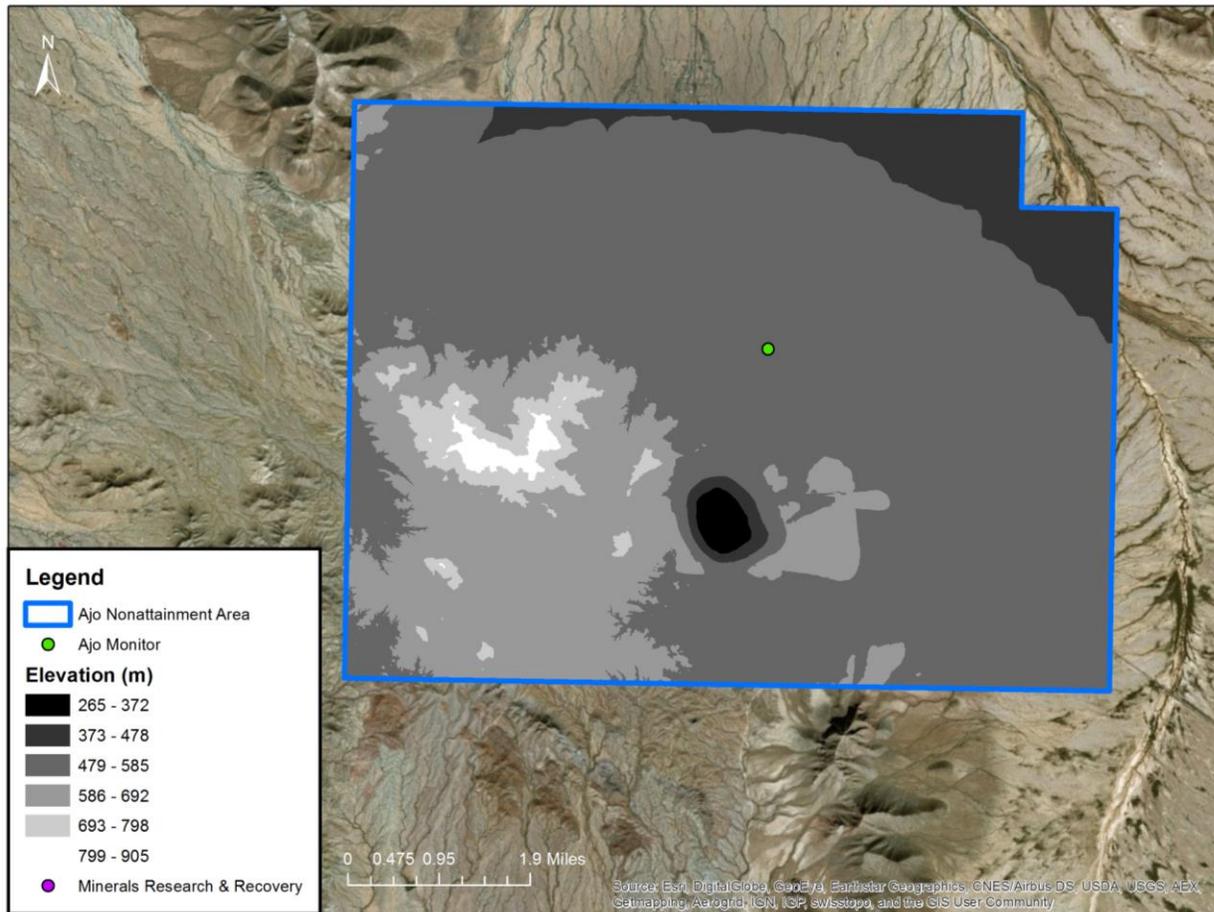
The final adjustment involves the calculation of an effective land area for use in the Vacant Land & Open Area category. While not as extreme as in other areas of Arizona, generally as elevation in the Ajo PM₁₀ area increases so does the amount of vegetative cover. Also, the higher elevations in the Ajo PM₁₀ area tend to be more mountainous and rocky. This results in an inverse correlation between terrain elevation and windblown dust potential. To account for the different emission characteristics of these various biomes and elevations ADEQ employed the use of an effective land area. The effective land area adjusts the amount of total land in the vacant land category by taking a weighted average of the land area found at various terrain elevations.

The first step in developing these effective land areas is to determine terrain elevation bins. For this calculation, bins were established using ArcGIS and were generated by an equal interval method such that 6 bins were established. These bins and their associated elevations are presented in Table A-34 and graphically displayed in Figure A-20.

Table A-34: Elevation Bins

Elevation Bin	Elevation Range (m)
A	265 – 372
B	373 – 478
C	479 – 585
D	586 – 692
E	693 – 798
F	799 – 905

Figure A-20: Ajo PM₁₀ Area Elevation



Once the elevation bins have been established, the next step is to determine the amount of land contained within each bin. ADEQ used ArcGIS to perform this spatial analysis, which resulted in the land area breakdown presented in Table A-35.

Table A-35: Elevation Distribution

Elevation Type	Break Values (m)	Count	Percent of Total
A	372	5,117	1.90%
B	478	6,987	2.60%
C	585	80,879	30.05%
D	692	133,274	49.52%
E	798	34,532	12.83%
F	905	8,363	3.11%

The next step is to assign appropriate adjustment factors to each elevation bin. ADEQ established the adjustment factors based on the following methodology:

- Land area for each bin was calculated by multiplying the Vacant Land & Open Area total area (4.66E+07 m²) by the corresponding percentage value in Table A-35.
- The lowest elevation bin would represent the baseline condition and receive no adjustment factor.
- The highest elevation would receive an adjustment factor of 0.195¹⁰.
- Linear interpolation was used to establish the adjustment factors for the intermediate elevation bins.
- The total effective land area represents the sum of the effective land areas of the individual bins.

Table A-36: Effective Land Area

Elevation Type	Land Area (m ²)	Adjustment Factor	Effective Land Area (m ²)
A	1.64E+06	1.000	1.64E+06
B	2.24E+06	0.839	1.88E+06
C	2.59E+07	0.678	1.76E+07
D	4.27E+07	0.517	2.21E+07
E	1.11E+07	0.356	3.94E+06
F	2.68E+06	0.195	5.22E+05
Total Effective Land Area (m ²)			4.76E+07

Calculate Emissions

Now that all of the calculation parameters have been established, the final step is to apply them to the emission calculations. In order to consolidate the resulting tables the reference codes listed in Table A-37 are used in place of land use category descriptions.

¹⁰ (Marek Korcz, 2009). Table 5 lists correction factors for various vegetative cover types. The “moors, shrubland, savanna” category lists a correction factor of 0.195, which was used in this methodology as the adjustment factor applied to the highest elevation Sonoran mixed scrubland in the Ajo PM₁₀ area.

Table A-37: Land Use Reference Codes

Land Category	Land Use Description	Reference Code
Developed Rural Land (low density residential)	Unpaved Roads/Alleys	DRL-UNRD
Developed Rural Land (low density residential)	Unpaved Parking Areas	DRL-UNPK
Developed Rural Land (low density residential)	Disturbed Open Areas/Vacant Lots	DRL-OAVL
Developed Rural Land (low density residential)	Other	DRL-OTHR
Non-Developed Land	Unpaved Roads	NDL-UNRD
Non-Developed Land	Vacant Land & Open Areas	NDL-VLOA
Non-Developed Land	Agriculture	NDL-AGLR
Non-Developed Land	Other (Freeport-McMoRan)	NDL-OTHR

Table A-38: Emission Calculation Inputs

Year	Reference Code	Disturbed Area (m ²)	Undisturbed Area (m ²)	Wind Event Duration (s)	Adjusted Disturbed EF (g/m ² *s)	Adjusted Undisturbed EF (g/m ² *s)
2011	DRL-UNRD	9.26E+04	3.86E+03	1,958,400	5.2E-05	9.1E-06
2011	DRL-UNPK	2.91E+03	1.21E+02	1,958,400	5.2E-05	9.1E-06
2011	DRL-OAVL	8.22E+04	9.13E+03	1,958,400	5.2E-05	9.1E-06
2011	DRL-OTHR	8.90E+05	8.01E+06	1,958,400	5.2E-05	9.1E-06
2011	NDL-UNRD	9.22E+04	4.18E+03	1,958,400	5.2E-05	9.1E-06
2011	NDL-VLOA	7.14E+06	4.05E+07	1,958,400	5.2E-05	9.1E-06
2011	NDL-AGLR	4.66E+03	4.07E+03	1,958,400	5.2E-05	9.1E-06
2011	NDL-OTHR	2.53E+06	2.27E+07	1,958,400	5.2E-05	9.1E-06
2012	DRL-UNRD	9.26E+04	3.86E+03	1,612,800	6.6E-05	1.1E-05
2012	DRL-UNPK	2.91E+03	1.21E+02	1,612,800	6.6E-05	1.1E-05
2012	DRL-OAVL	8.22E+04	9.13E+03	1,612,800	6.6E-05	1.1E-05
2012	DRL-OTHR	8.90E+05	8.01E+06	1,612,800	6.6E-05	1.1E-05
2012	NDL-UNRD	9.22E+04	4.18E+03	1,612,800	6.6E-05	1.1E-05
2012	NDL-VLOA	7.14E+06	4.05E+07	1,612,800	6.6E-05	1.1E-05
2012	NDL-AGLR	4.66E+03	4.07E+03	1,612,800	6.6E-05	1.1E-05
2012	NDL-OTHR	2.53E+06	2.27E+07	1,612,800	6.6E-05	1.1E-05
2013	DRL-UNRD	9.26E+04	3.86E+03	2,138,400	5.5E-05	9.6E-06
2013	DRL-UNPK	2.91E+03	1.21E+02	2,138,400	5.5E-05	9.6E-06
2013	DRL-OAVL	8.22E+04	9.13E+03	2,138,400	5.5E-05	9.6E-06
2013	DRL-OTHR	8.90E+05	8.01E+06	2,138,400	5.5E-05	9.6E-06
2013	NDL-UNRD	9.22E+04	4.18E+03	2,138,400	5.5E-05	9.6E-06
2013	NDL-VLOA	7.14E+06	4.05E+07	2,138,400	5.5E-05	9.6E-06
2013	NDL-AGLR	4.66E+03	4.07E+03	2,138,400	5.5E-05	9.6E-06
2013	NDL-OTHR	2.53E+06	2.27E+07	2,138,400	5.5E-05	9.6E-06
2014	DRL-UNRD	9.26E+04	3.86E+03	950,400	4.2E-05	7.7E-06

Year	Reference Code	Disturbed Area (m ²)	Undisturbed Area (m ²)	Wind Event Duration (s)	Adjusted Disturbed EF (g/m ² *s)	Adjusted Undisturbed EF (g/m ² *s)
2014	DRL-UNPK	2.91E+03	1.21E+02	950,400	4.2E-05	7.7E-06
2014	DRL-OAVL	8.22E+04	9.13E+03	950,400	4.2E-05	7.7E-06
2014	DRL-OTHR	8.90E+05	8.01E+06	950,400	4.2E-05	7.7E-06
2014	NDL-UNRD	9.22E+04	4.18E+03	950,400	4.2E-05	7.7E-06
2014	NDL-VLOA	7.14E+06	4.05E+07	950,400	4.2E-05	7.7E-06
2014	NDL-AGLR	4.66E+03	4.07E+03	950,400	4.2E-05	7.7E-06
2014	NDL-OTHR	2.53E+06	2.27E+07	950,400	4.2E-05	7.7E-06
2015	DRL-UNRD	9.26E+04	3.86E+03	1,144,800	4.0E-05	7.3E-06
2015	DRL-UNPK	2.91E+03	1.21E+02	1,144,800	4.0E-05	7.3E-06
2015	DRL-OAVL	8.22E+04	9.13E+03	1,144,800	4.0E-05	7.3E-06
2015	DRL-OTHR	8.90E+05	8.01E+06	1,144,800	4.0E-05	7.3E-06
2015	NDL-UNRD	9.22E+04	4.18E+03	1,144,800	4.0E-05	7.3E-06
2015	NDL-VLOA	7.14E+06	4.05E+07	1,144,800	4.0E-05	7.3E-06
2015	NDL-AGLR	4.66E+03	4.07E+03	1,144,800	4.0E-05	7.3E-06
2015	NDL-OTHR	2.53E+06	2.27E+07	1,144,800	4.0E-05	7.3E-06
2016	DRL-UNRD	9.26E+04	3.86E+03	1,134,000	4.5E-05	8.2E-06
2016	DRL-UNPK	2.91E+03	1.21E+02	1,134,000	4.5E-05	8.2E-06
2016	DRL-OAVL	8.22E+04	9.13E+03	1,134,000	4.5E-05	8.2E-06
2016	DRL-OTHR	8.90E+05	8.01E+06	1,134,000	4.5E-05	8.2E-06
2016	NDL-UNRD	9.22E+04	4.18E+03	1,134,000	4.5E-05	8.2E-06
2016	NDL-VLOA	7.14E+06	4.05E+07	1,134,000	4.5E-05	8.2E-06
2016	NDL-AGLR	4.66E+03	4.07E+03	1,134,000	4.5E-05	8.2E-06
2016	NDL-OTHR	2.53E+06	2.27E+07	1,134,000	4.5E-05	8.2E-06

As mentioned on page A-35, below is the equation for calculating windblown dust from vacant lands.

$$PM_{10} = EF \left(\frac{g}{m^2s} \right) * Wind\ Event\ Duration\ (s) * Effective\ Area\ (m^2)$$

The inputs for the calculation are all listed in Table A-38. The only additional calculation is to convert the PM₁₀ from grams/year into tons/year. Results are presented in Table A-39 below.

Table A-39: Emission Totals – Windblown Dust from Vacant Land

Year	Reference Code	Disturbed Land Emissions (tons/year)	Undisturbed Land Emissions (tons/year)	Total PM ₁₀ Emission (tons/year)
2011	DRL-UNRD	10.33	0.08	10.41
	DRL-UNPK	0.33	0.00	0.33
	DRL-OAVL	9.18	0.18	9.35
	DRL-OTHR	99.35	157.70	257.05

Appendix A - Ajo PM₁₀ Emission Inventory Technical Support Document

Year	Reference Code	Disturbed Land Emissions (tons/year)	Undisturbed Land Emissions (tons/year)	Total PM ₁₀ Emission (tons/year)
	NDL-UNRD	10.30	0.08	10.38
	NDL-VLOA	797.15	796.71	1,593.86
	NDL-AGLR	0.52	0.08	0.60
	NDL-OTHR	82.24	129.53	211.77
	Total	1,009.40	1,084.36	2,093.76
2012	DRL-UNRD	10.83	0.08	10.91
	DRL-UNPK	0.34	0.00	0.34
	DRL-OAVL	9.62	0.19	9.81
	DRL-OTHR	104.17	163.12	267.29
	NDL-UNRD	10.80	0.09	10.88
	NDL-VLOA	835.82	824.07	1,659.89
	NDL-AGLR	0.55	0.08	0.63
	NDL-OTHR	85.97	128.94	214.91
	Total	1,058.10	1,116.57	2,174.67
2013	DRL-UNRD	11.94	0.09	12.03
	DRL-UNPK	0.38	0.00	0.38
	DRL-OAVL	10.61	0.21	10.81
	DRL-OTHR	114.85	182.22	297.07
	NDL-UNRD	11.90	0.10	12.00
	NDL-VLOA	921.54	920.55	1,842.09
	NDL-AGLR	0.60	0.09	0.69
	NDL-OTHR	94.97	149.20	244.20
Total	1,166.79	1,252.46	2,419.25	
2014	DRL-UNRD	4.04	0.03	4.07
	DRL-UNPK	0.13	0.00	0.13
	DRL-OAVL	3.59	0.07	3.66
	DRL-OTHR	38.88	64.89	103.77
	NDL-UNRD	4.03	0.03	4.06
	NDL-VLOA	311.93	327.83	639.76
	NDL-AGLR	0.20	0.03	0.24
	NDL-OTHR	32.23	53.19	85.42
Total	395.03	446.07	841.11	
2015	DRL-UNRD	4.63	0.04	4.66
	DRL-UNPK	0.15	0.00	0.15
	DRL-OAVL	4.11	0.08	4.19
	DRL-OTHR	44.49	74.12	118.61
	NDL-UNRD	4.61	0.04	4.65
	NDL-VLOA	356.98	374.43	731.42
	NDL-AGLR	0.23	0.04	0.27
	NDL-OTHR	35.74	59.54	95.28

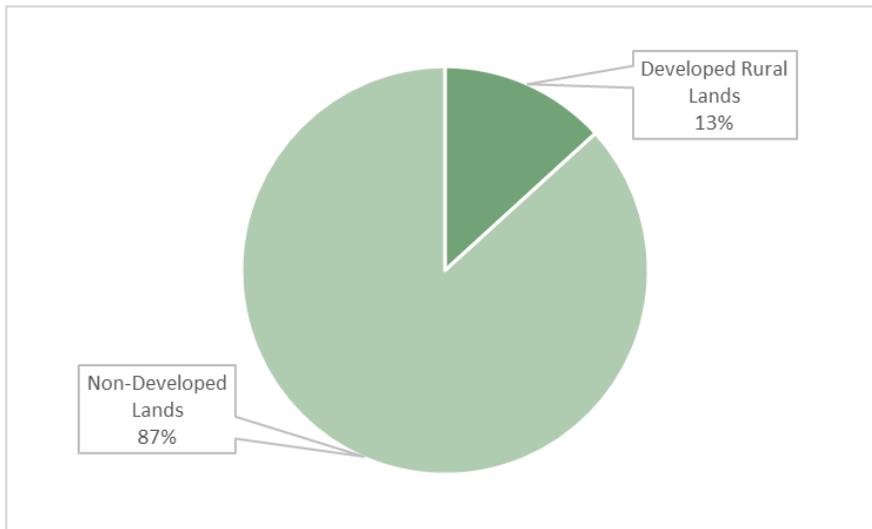
Year	Reference Code	Disturbed Land Emissions (tons/year)	Undisturbed Land Emissions (tons/year)	Total PM ₁₀ Emission (tons/year)
	Total	450.94	508.29	959.23
2016	DRL-UNRD	5.18	0.04	5.22
	DRL-UNPK	0.16	0.00	0.16
	DRL-OAVL	4.60	0.09	4.69
	DRL-OTHR	49.77	82.22	131.99
	NDL-UNRD	5.16	0.04	5.20
	NDL-VLOA	399.35	415.37	814.72
	NDL-AGLR	0.26	0.04	0.30
	NDL-OTHR	39.99	66.05	106.05
	Total	504.47	563.85	1,068.33

Table A-40: Freeport-McMoRan Land (NDL-OTHR) Windblown Emissions

	2011	2012	2013	2014	2015	2016
Tailings Impoundment ¹¹	15.12	15.34	17.44	6.10	6.97	7.76
Slag Reprocessing Facility	5.45	5.53	6.29	2.20	0.18 ¹²	0.20
Ajo Mine	23.93	24.29	27.60	9.65	11.03	12.28
Remaining Freeport Property	167.26	169.74	192.87	67.47	77.11	85.81
Total	211.76	214.90	244.20	85.42	95.29	106.05

*Stabilization of the Slag Reprocessing Facility was completed in 2015

Figure A-21: Windblown Emission Totals



¹¹ A stable land correction factor of 0.07 was used for the tailing impoundment portion of the Freeport property to account for stabilization measures taken in the early 1990s.

¹² The same stable land correction factor of 0.07 was used for the slag dump portion of the Freeport property to account for stabilization measures taken in 2015 when MRRI left the property.

Figure A-22: Windblown Developed Rural Land Emissions

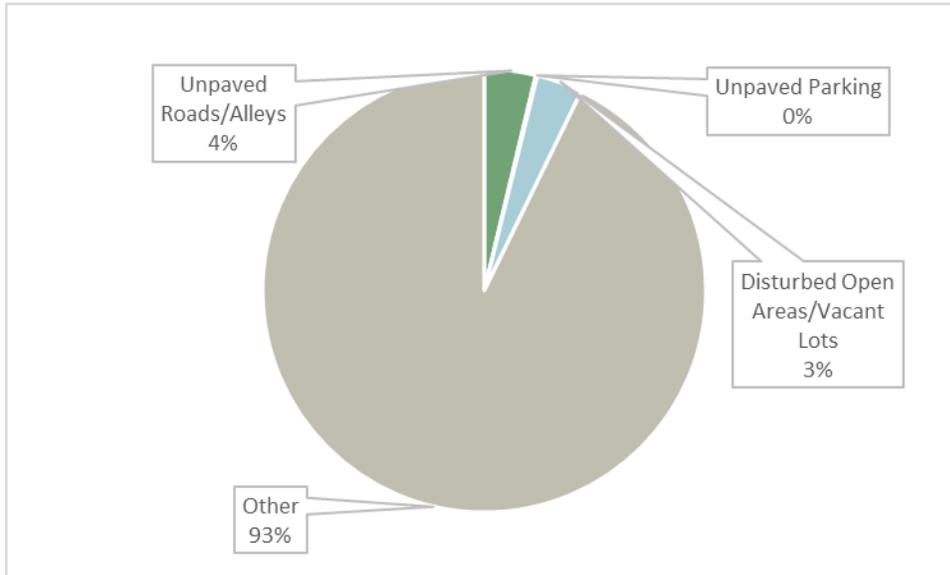
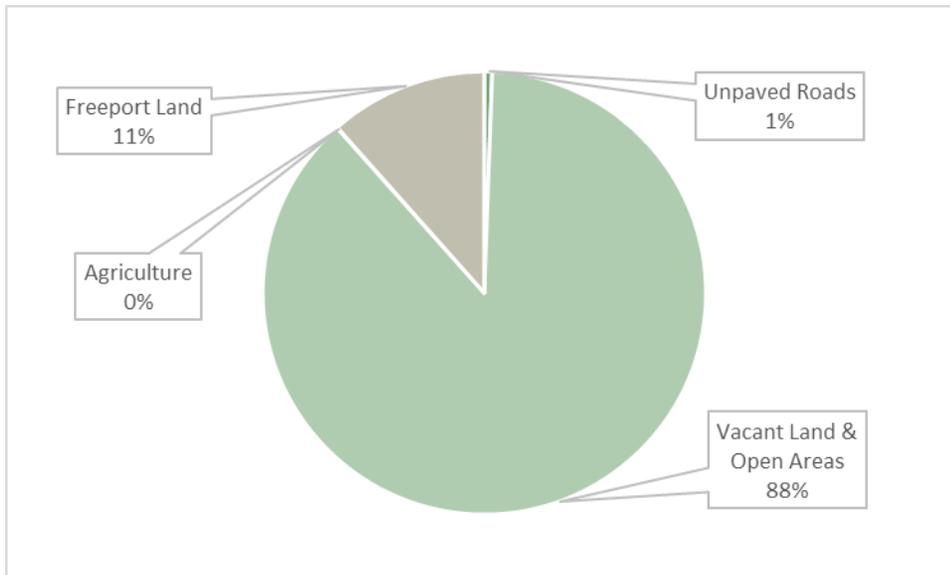


Figure A-23: Windblown Rural Non-Developed Land Emissions



A5.3.1.3 Fires

Fire emission estimates for the Ajo PM₁₀ area were calculated using the 2014 NEI. Fire emissions were broken down into three sectors: agriculture field burning, prescribed fires, and wildfires. The estimate for agricultural field burning was calculated by allocating county totals to the NAA based on cropland area. Details of this allocation method are in Section A5.3.2. Both wildfires and prescribed fires were estimated based on the use of GIS software (ArcGIS). A raw data file containing geocoded event-level fire data was obtained from via email from Venkatesh

Rao (EPA OAQPS)¹³. This data was uploaded into ArcMap and clipped to the Ajo PM₁₀ area. The resulting subset of the data file was analyzed to determine that no fires occurred within the NAA. There were three nearby (<25 miles away) wildfires that did occur but the total PM₁₀ from these wildfires was negligible.

Table A-41: 2014 Fire Events Nearby

Date	Event ID	Event Name	Area	PM _{2.5}	PM ₁₀	NH ₃
5/1/2014	SF11E530392	Unknown Fire	100	0.340243	0.401476	0.058201
6/1/2014	SF11E552252	Ajo Fire	0.993587	0.003386	0.003993	0.000578
6/2/2014	SF11E547672	Pole Line Fire	0.099359	0.000341	0.000396	0.000053

A5.3.2 Emission Allocation Methodology

In general, this TSD relied on the 2014 NEI for emission estimates. County-level emissions were obtained from the 2014 NEI and allocated down to the Ajo PM₁₀ NAA based on an allocation method that was most appropriate. These allocation methods include population, land area, cropland area, and rail length. The methodologies associated with these allocation methods are described in the following sub-sections.

Table A-42 summarizes the allocation methods used for each of the nonpoint emission sectors. Several changes in allocation methodology have been made since the initial Inventory Preparation Plan. Agricultural field burning will be allocated based on cropland area instead of land area. Wildfire and prescribed fire emissions in the NAA will be determined based on geocoded event-level data, so no allocation methods will be needed. Industrial processes – mining emissions are covered under the point category, and so no allocation will be needed. Dust – Windblown from Vacant Land is a new sector category that EPA Region 9 recommended after reviewing the IPP. This category will be calculated based on a custom methodology and will not require a specific allocation methodology.

Table A-42: Nonpoint Sector Allocation Methods

Emission Sector	Allocation Method
Agriculture - Crops & Livestock Dust	Cropland Area
Commercial Cooking	Population
Dust - Construction Dust	Population
Dust - Paved Road Dust	Population
Dust - Unpaved Road Dust	Population
Dust – Windblown from Vacant Land	N/A
Fires - Agricultural Field Burning	Cropland Area*
Fires - Prescribed Fires	N/A*
Fires – Wildfires	N/A*
Fuel Comb - Comm/Institutional - Biomass	Population
Fuel Comb - Comm/Institutional - Coal	Population
Fuel Comb - Comm/Institutional - Natural Gas	Population

¹³ Data obtained by ADEQ with regards to the Hayden PM₁₀ plan.

Emission Sector	Allocation Method
Fuel Comb - Comm/Institutional - Oil	Population
Fuel Comb - Electric Generation - Natural Gas	Population
Fuel Comb - Electric Generation - Oil	Population
Fuel Comb - Industrial Boilers, ICEs - Biomass	Population
Fuel Comb - Industrial Boilers, ICEs - Natural Gas	Population
Fuel Comb - Industrial Boilers, ICEs - Oil	Population
Fuel Comb - Industrial Boilers, ICEs - Other	Population
Fuel Comb - Residential - Natural Gas	Population
Fuel Comb - Residential – Oil	Population
Fuel Comb - Residential - Other	Population
Fuel Comb - Residential - Wood	Population
Industrial Processes - Chemical Manuf	Population
Industrial Processes – Mining	N/A*
Industrial Processes - NEC	Population
Industrial Processes - Non-ferrous Metals	Population
Industrial Processes - Oil & Gas Production	Population
Industrial Processes - Pulp & Paper	Population
Industrial Processes - Storage and Transfer	Population
Miscellaneous Non-Industrial NEC	Population
Solvent - Industrial Surface Coating & Solvent Use	Population
Waste Disposal	Population

* Indicates allocation methodology change from Inventory Preparation Plan

A5.3.2.1 Population

The population allocation methodology is a ratio of population in the given county to the population in the NAA, as shown in the equation below. Since the 2014 NEI served as the basis for the emission calculations, 2014 population totals were used to derive the allocation factor.

$$\frac{P_{na}}{P_c} = AF_p$$

Where:

- P_{na} = Population estimate for county portion of Nonattainment Area
- P_c = Population estimate of entire county
- AF_p = Population allocation factor

Table A-43: Population

Area	2014 Population
Pima County	1,007,162
NAA	3,295

Table A-44: Population Allocation Factors

Area	Allocation Factor
Pima County	0.003271545

A5.3.2.2 Land Area

The land area allocation methodology is a ratio of land area in the given county to the land area of the NAA, as shown in the following equation:

$$\frac{LA_{na}}{LA_c} = AF_{la}$$

Where:

- LA_{na} = Land area estimate for county portion of Nonattainment Area
- LA_c = Land area estimate of entire county
- AF_{la} = Land area allocation factor

Table A-45 lists the land area totals for the NAA and Pima County. These totals served as inputs to the land area allocation equation and resulted in the allocation factor presented in Table A-46.

Table A-45: Land Area

Area	Land Area (mi ²)
Pima County	9,138.58
NAA	47.04

Table A-46: Land Area Allocation Factors

Area	Allocation Factor
Pima County	0.005122185

A5.3.2.3 Cropland Area

The cropland area allocation methodology is similar to the land area methodology, however instead of total land area this method uses cropland area. Estimates of cropland area were obtained from CropScape, a cropland data layer provided by the U.S. Department of Agriculture¹⁴. The CropScape data layer contains annual cropland acreage data for various crop types, and the web application allows for detailed information on user-defined areas of interest. To derive the appropriate data, ADEQ defined two areas of interest in CropScape: Pima County and the Ajo PM₁₀ NAA. ADEQ downloaded 2014 cropland acreage data for these areas and then imported it into ArcMap. Finally, using ArcMap the totals presented in Table A-47 were calculated. The allocation factor is a ratio of cropland area in a given county to the cropland area of that county's portion of the NAA, as shown in the following equation:

$$\frac{CLA_{na}}{CLA_c} = AF_{cla}$$

Where:

- CLA_{na} = Cropland area estimate for county portion of Nonattainment Area
- CLA_c = Cropland area estimate of entire county

¹⁴ (U.S. Department of Agriculture - National Agriculture Statistics Service, 2016)

- AF_{cla} = Cropland area allocation factor

Table A-47: Cropland

Area	Cropland (acres)	Noncropland (acres)
Pima County	34,792.70	5,846,339.30
Total NAA	6.40 (0.02%)	30,100.20 (99.98%)

Table A-48: Cropland Allocation Factors

Area	Allocation Factor
Pima County	0.000183947

A5.3.3 Emission Projection Methodology

In general, this TSD relied on the county-level 2014 NEI for emission estimates. These county-level emissions were allocated to the NAA as explained in Section A5.3.2. Once appropriately allocated to the NAA, the emissions were then projected to establish emission estimates for future years. Since 2014 served as the baseline emission inventory, all other inventory years were projected forward from this 2014 dataset. As with the allocation methodologies, the most appropriate projection methodologies were used for the individual emission sectors. Table A-49 summarizes the projection methods used for each of the nonpoint emission sectors. Some changes in projection methodology have been made since the initial Inventory Preparation Plan.

Table A-49: Nonpoint Sector Projection Methods

Emission Sector	Projection Method
Agriculture - Crops & Livestock Dust	None – Emissions will be held constant
Commercial Cooking	Population Growth
Dust - Construction Dust	Population Growth
Dust - Paved Road Dust	Population Growth
Dust - Unpaved Road Dust	Population Growth
Dust - Windblown from Vacant Land	None – Emissions will be held constant
Fires - Agricultural Field Burning	None – Emissions will be held constant
Fires - Prescribed Fires	None – Emissions will be held constant
Fires – Wildfires	None – Emissions will be held constant
Fuel Comb - Comm/Institutional - Biomass	Population Growth
Fuel Comb - Comm/Institutional - Coal	Population Growth
Fuel Comb - Comm/Institutional - Natural Gas	Population Growth
Fuel Comb - Comm/Institutional - Oil	Population Growth
Fuel Comb - Electric Generation - Natural Gas	Population Growth
Fuel Comb - Electric Generation - Oil	Population Growth
Fuel Comb - Industrial Boilers, ICEs - Biomass	Population Growth
Fuel Comb - Industrial Boilers, ICEs - Natural Gas	Population Growth
Fuel Comb - Industrial Boilers, ICEs - Oil	Population Growth

Emission Sector	Projection Method
Fuel Comb - Industrial Boilers, ICEs - Other	Population Growth
Fuel Comb - Residential - Natural Gas	Population Growth
Fuel Comb - Residential – Oil	Population Growth
Fuel Comb - Residential - Other	Population Growth
Fuel Comb - Residential - Wood	Population Growth
Industrial Processes - Chemical Manuf	Population Growth
Industrial Processes – Mining	N/A*
Industrial Processes - NEC	Population Growth
Industrial Processes - Non-ferrous Metals	Population Growth
Industrial Processes - Oil & Gas Production	Population Growth
Industrial Processes - Pulp & Paper	Population Growth
Industrial Processes - Storage and Transfer	Population Growth
Miscellaneous Non-Industrial NEC	Population Growth
Solvent - Industrial Surface Coating & Solvent Use	Population Growth
Waste Disposal	Population Growth

* Indicates allocation methodology change from Inventory Preparation Plan

A5.4 On-road & Non-road Mobile Source Inventory

Table A-50: Emission Totals - On-road & Non-road

Emission Sector	PM₁₀ (tons)					
	2011	2014	2016	2021	2026	2031
Mobile – Aircraft	0.00	0.00	0.00	0.00	0.00	0.00
Mobile - Locomotives	0.00	0.00	0.00	0.00	0.00	0.00
Mobile - Non-Road Equipment - Diesel	0.78	0.62	0.63	0.67	0.70	0.74
Mobile - Non-Road Equipment - Gasoline	0.44	0.45	0.45	0.48	0.50	0.53
Mobile - Non-Road Equipment - Other	0.02	0.02	0.02	0.02	0.02	0.02
Mobile - On-Road Diesel Heavy Duty Vehicles	0.17	0.15	0.15	0.09	0.08	0.07
Mobile - On-Road Diesel Light Duty Vehicles	0.00	0.00	0.00	0.00	0.00	0.00
Mobile - On-Road non-Diesel Heavy Duty Vehicles	0.02	0.02	0.02	0.02	0.03	0.03
Mobile - On-Road non-Diesel Light Duty Vehicles	0.10	0.12	0.13	0.14	0.17	0.18
Total	1.53	1.38	1.39	1.42	1.50	1.56

A5.4.1 Emission Calculation Methodology

The on-road and non-road mobile sectors were calculated based on two methodologies; the 2014 NEIv1 and MOVES. ADEQ used estimates provided in the 2014 NEIv1 for the aircraft and locomotive sectors and utilized the MOVES model for the remaining sectors. For these calculations ADEQ used MOVES2014a with locally defined inputs where available.

Table A-51: Mobile Calculation Methods

Emission Sector	Calculation Method
Mobile – Aircraft	2014 NEIv1
Mobile - Locomotives	2014 NEIv1
Mobile - Non-Road Equipment - Diesel	2014 NEIv1
Mobile - Non-Road Equipment - Gasoline	2014 NEIv1
Mobile - Non-Road Equipment - Other	2014 NEIv1
Mobile - On-Road Diesel Heavy Duty Vehicles	MOVES2014a*
Mobile - On-Road Diesel Light Duty Vehicles	MOVES2014a*
Mobile - On-Road non-Diesel Heavy Duty Vehicles	MOVES2014a*
Mobile - On-Road non-Diesel Light Duty Vehicles	MOVES2014a*

* Indicates allocation methodology change from Inventory Preparation Plan

A5.4.2 Emission Allocation Methodology

ADEQ utilized several different methods in allocating emissions to the Ajo area, which are summarized below in Table A-52. The mobile on-road sectors were not explicitly allocated to the Ajo area, instead parameters were input into the MOVES2014a model for the Ajo area. Therefore, the resulting emission totals pertained to only the Ajo area.

Table A-52: Mobile Allocation Methods

Emission Sector	Allocation Method
Mobile – Aircraft	Airport Activity – See A5.4.2.1
Mobile - Locomotives	Rail Line Length – See A5.4.2.2
Mobile - Non-Road Equipment - Diesel	Population
Mobile - Non-Road Equipment - Gasoline	Population
Mobile - Non-Road Equipment - Other	Population
Mobile - On-Road Diesel Heavy Duty Vehicles	MOVES2014a*
Mobile - On-Road Diesel Light Duty Vehicles	MOVES2014a*
Mobile - On-Road non-Diesel Heavy Duty Vehicles	MOVES2014a*
Mobile - On-Road non-Diesel Light Duty Vehicles	MOVES2014a*

* Indicates allocation methodology change from Inventory Preparation Plan

A5.4.2.1 Airport Activity

The airport activity allocation factor is used only to allocate emissions in the Mobile – Aircraft emission sector. ADEQ based this allocation methodology on a ratio of airport activity in a given county to the airport activity in that county’s portion of the NAA, as shown in the following equation:

$$\frac{AA_{na}}{AA_c} = AF_{aa}$$

Where:

- AA_{na} = Airport activity estimate for county portion of Nonattainment Area

- AA_c = Airport activity estimate of entire county
- AF_{aa} = Airport activity allocation factor

ADEQ obtained the list of airports and their associated activity levels from the website www.airnav.com/airports/us/AZ.

Table A-53: Airport Activity

ID	Name	City	County	In NAA?	Aircraft Operations (average per day)
P01	Eric Marcus Municipal Airport	Ajo	Pima	No	0.83
KAVQ	Marana Regional Airpark	Marana	Pima	No	247
E78	Sells Airport	Sells	Pima	No	0.73
KTUS	Tucson International Airport	Tucson	Pima	No	350
KRYN	Ryan Field Airport	Tucson	Pima	No	300
Area		Airport Activity (average/day)			
Pima County		179.712			
NAA		0			

Table A-54: Airport Activity Allocation Factors

Area	Allocation Factor
Pima County	0

A5.4.2.2 Rail Line Length

The rail length allocation methodology is a ratio of rail length in a given county to the rail length of that county’s portion of the NAA, as shown in the following equation:

$$\frac{RL_{na}}{RL_c} = AF_{rl}$$

Where:

- RL_{na} = Rail length estimate for county portion of Nonattainment Area
- RL_c = Rail length estimate of entire county
- AF_{rl} = Rail length allocation factor

Table A-55: Rail Length

Area	Rail Length (miles)
Pima County	193.51
NAA	0 ¹⁵

¹⁵ Satellite imagery was used to determine that the rail tracks in the NAA either go to nowhere, have been removed, or have portions that are covered by pavement or sediment. Due to the lack of operable railway tracks, we can then assume zero locomotive emissions for this area.

Table A-56: Rail Length Allocation Factors

Area	Allocation Factor
Pima County	0

A5.4.3 Emission Projection Methodology

ADEQ used two methods to project future-year emissions: population growth and MOVES. For the aircraft, locomotive, and non-road sectors ADEQ used population growth as an indicator of future emissions growth. For the on-road sectors, ADEQ did not specifically project the emission totals, rather future-year parameter values were input into MOVES2014a. Examples of this are projected Vehicle Miles Traveled (VMT) totals obtained from the Arizona Department of Transportation (ADOT).

Table A-57: Mobile Projection Methods

Emission Sector	Projection Method
Mobile – Aircraft	Population Growth
Mobile - Locomotives	Population Growth
Mobile - Non-Road Equipment - Diesel	Population Growth
Mobile - Non-Road Equipment - Gasoline	Population Growth
Mobile - Non-Road Equipment - Other	Population Growth
Mobile - On-Road Diesel Heavy Duty Vehicles	MOVES2014a*
Mobile - On-Road Diesel Light Duty Vehicles	MOVES2014a*
Mobile - On-Road non-Diesel Heavy Duty Vehicles	MOVES2014a*
Mobile - On-Road non-Diesel Light Duty Vehicles	MOVES2014a*

* Indicates allocation methodology change from Inventory Preparation Plan

A5.4.4 Transportation Conformity

Transportation conformity is used to ensure that any federally funded transportation plan, program, or project does not interfere with an area's ability to attain the NAAQS. For transportation conformity in the Ajo PM₁₀ area, ADEQ proposed the following approach:

1. Determine the overall contribution of motor vehicle PM₁₀ emissions in the Ajo PM₁₀ nonattainment area
 - a. If motor vehicle emissions constitute a significant proportion of total PM₁₀ emissions, then ADEQ will develop a motor vehicle emission budget for the area
 - b. If motor vehicle emissions constitute an insignificant proportion of total PM₁₀ emissions, then ADEQ will include an explicit statement that no regional emissions analyses for PM₁₀ or its precursors is necessary for attainment and therefore is not necessary for conformity
 - c. ADEQ will also perform an analysis showing how future population growth affects the proportion of motor vehicle emissions in the Ajo PM₁₀ area.

2. Determine through consultation with the Arizona Department of Transportation if any major transportation projects are anticipated to occur in the Ajo PM₁₀ area within the maintenance timeframe of this plan
 - a. If any major transportation projects are anticipated, ADEQ will evaluate their potential impact on PM₁₀ emissions in the Ajo PM₁₀ area and their potential effect on the maintenance of the NAAQS.

In their comments to this approach, EPA Region 9 (L. Lawrence, previous communication regarding the Hayden PM₁₀ maintenance plan, November 30, 2016) stated that for an insignificance determination the motor vehicle inventory would need to include PM₁₀ estimates from vehicle exhaust, paved and unpaved re-entrainment, road construction. Once these PM₁₀ emissions have been estimated their totals can be compared to the total PM₁₀ emissions of the area, considering some additional criteria. These additional criteria are excerpted below:

- Only allowed when EPA has determined through the adequacy or approval process that a SIP demonstrates that regional on-road mobile source emissions are insignificant for a given pollutant/precursor and NAAQS
- Section 93.109(f):
 - “The SIP would have to demonstrate that it would be unreasonable to expect that such an area would experience enough motor vehicle emissions growth in that pollutant/precursor for a NAAQS violation to occur.”
- Insignificance is expected to occur in limited cases (e.g., small area dominated by stationary sources)
- In general, insignificance applies on the basis for the entire nonattainment or maintenance area (rather than a portion of an area in the same state)
- EPA’s insignificance findings based on a number of factors, including:
 - % of on-road mobile emissions in the context of the total SIP inventory, e.g.:
 - Less than 10%: NO_x, VOC, and direct PM₁₀
 - Less than 3%: direct PM_{2.5}
- Absence of SIP on-road control measures
- Historical and future projections of on-road emissions

Motor Vehicle Contributions

Table A-58: Transportation Related Emissions

Emission Sector	PM ₁₀ (tons)					
	2011	2014	2016	2021	2026	2031
On-road Mobile	0.30	0.29	0.30	0.26	0.27	0.28
Re-entrained Dust	31.84	32.78	32.97	35.03	36.88	38.63
Road Construction	0	0	0	0	0	0
Total Motor Vehicle Contribution	32.14	33.07	33.27	35.29	37.15	38.91
Percent of Total Inventory	1.84%	1.91%	1.98%	2.09%	2.20%	2.30%

- **On-Road Mobile** – Includes PM₁₀ emissions from vehicle exhaust, tire wear, & brake wear. Obtained by summing the PM₁₀ from the four on-road emission sectors (Table A-50).
- **Re-entrained Dust** – Includes re-entrained PM₁₀ from paved & unpaved roads. Obtained by summing the PM₁₀ totals in the Dust - Paved Road Dust and Dust - Unpaved Road Dust nonpoint emission sectors (Table A-23).
- **Road Construction** – No major road construction projects have occurred in the Ajo PM₁₀ area and no major future projects are included in any current planning documents¹⁶.

Summary

Based on the data and findings discussed in this Section, ADEQ believes that mobile on-road source emissions are an insignificant source of PM₁₀ in the Ajo PM₁₀ area. PM₁₀ emissions in the Ajo PM₁₀ area are dominated by windblown emissions, with on-road mobile emissions comprising only 1.91% of the 2014 emissions inventory. With no new road construction or road projects anticipated to occur, there is no reason to believe that mobile emissions will become a significant source of PM₁₀ during the maintenance period. Additionally, NO_x, VOCs, and direct PM_{2.5} are considered insignificant sources of PM₁₀ in this NAA (as previously discussed in Section A5.1) and therefore no evaluation of these pollutants is needed.

¹⁶ Review of Arizona Department of Transportation's five-year planning documents, <https://www.azdot.gov/planning/transportation-programming/overview>.

A6 Maintenance Analysis

Overall emissions in the Ajo area have decreased over the past 20 years due mainly to the closure of the significant point sources. The Ajo New Cornelia mine and smelter ceased operation in the late 1980s, which was then followed by the capping of the tailings impoundment in 1991-1992. The capping of the tailings impoundment led to a 90% emissions reduction of windblown emissions, which has continued through today (see Table A-59).

In addition to the capping of the tailings impoundment, the closure and stabilization of the slag reprocessing facility (MRRI) added additional emissions reduction to the area.

Table A-60 shows the reduction in operational emissions due to the closure of the facility in 2015. Additionally, Table A-61 shows the reductions from both operation and windblown emissions due to the closure of the facility as well as the stabilization of the slag pile in 2015.

In addition to the reductions in emissions from the closure of significant point sources, growth of the Ajo area is limited. The Ajo area is bounded to the West/Northwest by the Cabeza Prieta National Wildlife Refuge and nearby to the East by the Tohono O'odham Nation's reservation (see Figure A-1 above). This limits the available space for the Ajo area to grow.

State Route 85 passes through the center of Ajo, joining the Mexican border to Interstate 8 in Gila Bend. While the Ajo area does get through traffic going to and from Mexico, this traffic is considerably less than that of the other two major border crossings in Arizona (Yuma and Nogales). Additionally, the Arizona Department of Transportation's traffic data does not show any major increase in traffic in the area over the past 10 years.

Table A-59: Freeport-McMoRan Tailings Impoundment Emissions

		1991 Pre-Capping Emissions (tpy)		1992 Post-Capping Emissions (tpy)	
Tailings Impoundment		112		11	
Windblown Emissions					
2011	2012	2013	2014	2015	2016
15.12	15.34	17.44	6.10	6.97	7.76

Table A-60: Minerals Research and Recovery, Inc. Operation Emissions

	2006 PTE	2005 Actual Emissions (tons)	2006 Actual Emissions (tons)	2007 Actual Emissions (tons)	2014 Emissions* (PTE)	2016 Emissions (tpy)
MRRI	51.45	22.43	16.75	15.40	51.45	0
*Since no emissions data is available for 2014, the permit PTE will be used						

Table A-61: Minerals Research and Recovery, Inc. Windblown and Operation Emissions

	2011	2012	2013	2014	2015	2016**
MRRRI	56.90 (5.45 + 51.45)*	56.98 (5.53 + 51.45)	57.74 (6.29 + 51.45)	53.65 (2.20 + 51.45)	2.51	0.20
*(Windblown emissions + Operations PTE)						
**Operations at MRRRI ended in 2014, followed by the stabilization of the slag pile that was completed at the end of 2015						

While the point source inventory has seen reductions due to the closure of Minerals Research and Recovery, as well as the stabilization of the slag pile, the overall inventory does increase slightly from the attainment year (2016) to the projected years (2021-2031) due mainly to a minor projected increase in population. This increase in the inventory is less than one percent over the next 15 years, as shown in Table A-63. In order to determine the effect this slight increase will have on the ambient air in the area, the 2017 design concentration was scaled up by the percentage increase for the maintenance period inventory from the attainment year (Table A-63). The base design concentration (2017) was determined for the Ajo monitor using the “Table Look-Up” method described in the 1987 PM₁₀ SIP Development Guideline¹⁷ (Table A-62). The scaled up design concentrations for Ajo are well within a margin of safety under the NAAQS and demonstrate that Ajo will continue to maintain to the standard through the maintenance period.

Table A-62: Ajo Design Concentrations

	Number of Valid Days	Yearly 1 st Max	Yearly 2 nd Max	Yearly 3 rd Max	Yearly 4 th Max
2012	357	138	116	109	109
2013	363	299	141	100	99
2014	355	134	122	88	80
2015	325	67	65	50	49
2016	362	141	121	102	88
2017	365	109	83	82	77
	3 Year Total Valid Days	Data Point Used for Design Concn.	3 Year Design Concentration		
2014	1075	4 th Highest	134		
2015	1043	4 th Highest	122		
2016	1042	3 rd Highest	122		
2017	1052	4 th Highest	102		

Table A-63: Scaled Up Ajo Design Concentrations

	2016	2021	2026	2031
Total Emissions	1,680.35	1,685.73	1,690.61	1,695.26
% Change from Attainment Year	0.00%	0.32%	0.61%	0.89%
Scaled Up 2017 Design Concn. (µg/m³)	102	102	103	103

¹⁷ (EPA, 1987). The “table look up” method described in Section 6.3.1 was used to determine the PM₁₀ design concentration for the Ajo monitor.

A7 References

Arizona Department of Environmental Quality. (2015). *2015 West Pinal Moderate PM10 Nonattainment Area SIP*. Retrieved from http://azdeq.gov/enviro/air/plan/download/2015_west_pinal_sip_all.pdf

Environmental Protection Agency. (1987). *PM₁₀ SIP Development Guideline*, U.S. EPA, June 1987 (Publication No. EPA-450/2-86-001), Chapter 6.

Marek Korcz, J. F. (2009). Estimation of wind blown dust emissions in Europe and its vicinity. *Atmospheric Environment*, 1410-1420.

U.S. Department of Agriculture - National Agriculture Statistics Service. (2016, 02 23). *CropScape - Cropland Data Layer*. Retrieved from <http://nassgeodata.gmu.edu/CropScape/>

Exhibit AI – Exhibit Basics

AI1 Population Projection Methodology

Methodology for Population Estimates and Projections of Ajo PM₁₀ Nonattainment Area

1. ArcMap 10.3.1 was used to overlay the Ajo PM₁₀ Nonattainment Area boundary shapefiles onto the 2010 Census TIGER shapefiles for blocks in Pima County.
2. Calculate the proportion of each block within Pima County which are contained in the nonattainment area (AREA_PROP).
3. Calculate the proportion of county population contained in each block (BLOCKPROP).
4. Assume that the proportions calculated in steps 2 and 3 do not change from Census 2010 to 2040. Also assume that population within each block is evenly distributed over the total area of the block. The population estimates EST_i and projections $PROJ_i$ for year i are obtained using the equations:

$$EST_i = AREA_PROP * BLOCKPROP * COUNTY_{ij}$$

$$PROJ_i = AREA_PROP * BLOCKPROP * COUNTY_{ij}$$

$COUNTY_{ij}$ is the population estimate or projection for year i and county j as published by ADOA. The 2015 Medium Series Population Projections were used for Pima County.

5. As part of step 2, ArcMap produced the land area which falls within the nonattainment area by block. This is aggregated to the county level and reported in square miles.

AI2 MOVES Methodology

AI2.1 Summary

To calculate and project mobile road emissions for the Ajo PM₁₀ Maintenance area ADEQ used EPA's Motor Vehicle Emission Simulator (MOVES). MOVES is an emission modeling system that estimates emissions for mobile sources. ADEQ used MOVES2014a the most recent model version at the time of the plan's development.

Detailed below in Table A-64 are the planning assumptions used in the base year and the projection years.

Table A-64: Planning Assumptions

Assumption	Source
Population and Employment	Under the Governor's Executive Order No. 2011-04 all State agencies are required to use population estimates and population projections produced by ADOA.
Age Distribution	July 2014 vehicle registration data was provided by ADOT
Source Type Population	July 2014 and July 2016 vehicle registration data was adjusted by maintenance area ADOA population factor.
Meteorology Data	Default Values were applied.
I/M Programs	No I/M program information applied, there are no programs implemented in the Ajo maintenance area.
Vehicle Miles of Travel	VMT calculated from traffic counts from CY 2014 provided from ADOT. ADEQ used the EPA conversion tool to calculate monthly and daily VMT fractions.
Fuels	Default Values were applied.
Average Speed Distribution	Default Values were applied.
Road Type Distribution	GIS data from Arizona Transportation Information System (ATIS) was used to calculate distribution in Ajo Maintenance Area.
Fuels	Default Values were applied.
Ramp Fraction	No values were applied.

AI2.2 Population and Employment

Under the Governor's Executive Order No. 2011-04 the Arizona Department of Administration was designated the State agency responsible for preparing official population estimates and projections for the state of Arizona. All State agencies are required to use population estimates and population projections produced by ADOA.

ADEQ prepared official Arizona population projections for Pima counties using the 2010 U.S. census data as the base and ADOA population projects for future years. The official

methodology used by ADEQ, which is consistent with ADOA's methodology, can be found in Exhibit AI1 to the Ajo PM₁₀ Maintenance TSD. Values used are provided in Table A-66. Values calculated are provided in Table A-65.

Table A-65: Percentage of County Population in Ajo PM₁₀ Maintenance Area

County	Percentage
Pima	0.33%

Table A-66: Ajo PM₁₀ NAA Population Estimates and Growth Projection Factors

Year	Pima County Maintenance Area Population	Pima Growth from 2014
2014	3,295	0.00%
2016	3,333	1.15%
2021	3,521	6.86%
2026	3,707	12.50%
2031	3,884	17.88%

AI2.3 Source Type Population

ADOT provided the vehicle registration data for July 2014. Since the data provided by Arizona vehicle registration only contained the HPMS vehicle type ADOT also provided a conversion process spreadsheet to convert HPMS vehicle type IDs to MOVES Source Type IDs. The final source type population can be found in Table A-67.

Table A-67: Ajo PM₁₀ Maintenance Area Source Type Population

Type ID	sourceTypePopulation				
	2014	2016	2017	2026	2031
11	90	92	93	97	107
21	956	1009	1019	1065	1175
31	647	681	688	719	793
32	161	172	174	183	202
41	0	0	0	0	0
42	1	1	1	1	1
43	9	9	9	9	10
51	11	11	11	12	13
52	369	375	379	396	436
53	16	16	16	17	18
54	93	95	96	100	112
61	20	19	19	19	20
62	21	21	22	24	27

AI2.4 Age Distribution

To determine vehicle age distribution ADEQ used ADOT registration data from 2014. ADOT's MOVES converter was then used to convert said data from the MVD values to a MOVES compatible format.

Projected values for age distribution were calculated using EPA's age distribution projection tool using the 2014 values as the base value for each projected year.

AI2.5 Meteorology Data

ADEQ used defaults for Pima County.

AI2.6 I/M Programs

There are no I/M programs currently implemented or planning for the Ajo Maintenance Area.

AI2.7 Vehicle Miles of Travel

ADEQ used traffic counts obtained from ADOT's Automatic Traffic Recorders (ATRs). ATRs collect data 24 hours a day, 365 days a year for each lane including traffic volumes, speed and classification of vehicles. ADEQ used ATRs GIS data to pull the roads tracked by ATRs within the Ajo PM₁₀ Maintenance Area. ADEQ multiplied the segment mileage by the average annual daily traffic (AADT) to calculate the average annual daily vehicle miles traveled (AADVMT) for each HPMS vehicle type for the Maintenance Area.

ADOT projected AADT to 2030, and ADEQ interpolated the projection year (AADVMT) from these values. These values for AADVMT as are detailed in Table A-68.

Table A-68: Annual VMT for Ajo PM₁₀ Maintenance Area

HPMS Vehicle Type	2014	2016	2021	2026	2031
10	410905	450913	550934	650954	750974
25	64678025	70975457	86719037	102462616	118206196
40	435450	477848	583843	689838	795833
50	3260107	3577531	4371089	5164647	5958205
60	2036875	2235198	2731003	3226808	3722614

AI2.8 Fuels

ADEQ used the default inputs for Pima County.

AI2.9 Road Type Distribution

ADEQ calculated the mileage for all in roads in the Ajo Maintenance Area from GIS files using ATIS. The totals are detailed in Table A-69.

Table A-69: Road Type Distribution in Ajo Maintenance Area

	Road Miles	Distribution
Total	100.07	1.00
Rural Restricted	15.09	0.15
Rural Unrestricted	84.98	0.85

AI2.10 Ramp Fraction

No ramp fraction was applied.

Appendix B: Procedural Requirements and Authority – SIP

Exhibit B-I: Delegation of Authority

Exhibit B-II: Authorizing Statutes

Exhibit B-III: Public Notice and Affidavit of Publication

Exhibit B-IV: Public Hearing Agenda

Exhibit B-V: Public Hearing Sign-in Sheet

Exhibit B-VI: Public Hearing Officer Certification

Exhibit B-VII: Public Hearing Transcript

Exhibit B-VIII: Compilation of Comments and State Responses

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Exhibit B-I: Delegation of Authority

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Douglas A. Ducey
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY



Misael Cabrera
Director

January 4, 2017

To: Timothy S. Franquist Jr.
Division Director
Air Quality Division

Under A.R.S. §49-104 (D) (2), I authorize you, Timothy S. Franquist Jr., Division Director, Air Quality Division, Arizona Department of Environmental Quality, to perform any act, including execution of any pertinent documents, which I as Director of the Arizona Department of Environmental Quality am authorized or required to do by law with respect to A.R.S. Title 49, chapters 1 and 3 and any other acts relating to air quality including personnel actions.

This authority shall remain in effect until it is revoked or upon your separation from the Arizona Department of Environmental Quality. You may further delegate this authority in the best interest of the agency, however, those delegations must be in writing and you must forward a copy of any further delegations to me.

This delegation is effective back to May 23, 2016 and revokes all earlier delegations. I ratify all acts performed by you as Air Quality Division Director concerning the duties and functions in this delegation letter.

A handwritten signature in black ink, appearing to read "Misael Cabrera", written over a horizontal line.

Misael Cabrera
Director

Exhibit B-II: Authorizing Statutes

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ARIZONA REVISED STATUTES

Title 49 - The Environment

Chapter 1 – GENERAL PROVISIONS

Article 1 – Department of Environmental Quality

49-104. Powers and duties of the department and director

A. The department shall:

1. Formulate policies, plans and programs to implement this title to protect the environment.
2. Stimulate and encourage all local, state, regional and federal governmental agencies and all private persons and enterprises that have similar and related objectives and purposes, cooperate with those agencies, persons and enterprises and correlate department plans, programs and operations with those of the agencies, persons and enterprises.
3. Conduct research on its own initiative or at the request of the governor, the legislature or state or local agencies pertaining to any department objectives.
4. Provide information and advice on request of any local, state or federal agencies and private persons and business enterprises on matters within the scope of the department.
5. Consult with and make recommendations to the governor and the legislature on all matters concerning department objectives.
6. Promote and coordinate the management of air resources to ensure their protection, enhancement and balanced utilization consistent with the environmental policy of this state.
7. Promote and coordinate the protection and enhancement of the quality of water resources consistent with the environmental policy of this state.
8. Encourage industrial, commercial, residential and community development that maximizes environmental benefits and minimizes the effects of less desirable environmental conditions.
9. Ensure the preservation and enhancement of natural beauty and man-made scenic qualities.
10. Provide for the prevention and abatement of all water and air pollution including that related to particulates, gases, dust, vapors, noise, radiation, odor, nutrients and heated liquids in accordance with article 3 of this chapter and chapters 2 and 3 of this title.
11. Promote and recommend methods for the recovery, recycling and reuse or, if recycling is not possible, the disposal of solid wastes consistent with sound health, scenic and environmental quality policies. The department shall report annually on its revenues and expenditures relating to the solid and hazardous waste programs overseen or administered by the department.

12. Prevent pollution through the regulation of the storage, handling and transportation of solids, liquids and gases that may cause or contribute to pollution.

13. Promote the restoration and reclamation of degraded or despoiled areas and natural resources.

14. Participate in the state civil defense program and develop the necessary organization and facilities to meet wartime or other disasters.

15. Cooperate with the Arizona-Mexico commission in the governor's office and with researchers at universities in this state to collect data and conduct projects in the United States and Mexico on issues that are within the scope of the department's duties and that relate to quality of life, trade and economic development in this state in a manner that will help the Arizona-Mexico commission to assess and enhance the economic competitiveness of this state and of the Arizona-Mexico region.

16. Unless specifically authorized by the legislature, ensure that state laws, rules, standards, permits, variances and orders are adopted and construed to be consistent with and no more stringent than the corresponding federal law that addresses the same subject matter. This paragraph does not adversely affect standards adopted by an Indian tribe under federal law.

17. Provide administrative and staff support for the oil and gas conservation commission.

B. The department, through the director, shall:

1. Contract for the services of outside advisers, consultants and aides reasonably necessary or desirable to enable the department to adequately perform its duties.

2. Contract and incur obligations reasonably necessary or desirable within the general scope of department activities and operations to enable the department to adequately perform its duties.

3. Utilize any medium of communication, publication and exhibition when disseminating information, advertising and publicity in any field of its purposes, objectives or duties.

4. Adopt procedural rules that are necessary to implement the authority granted under this title, but that are not inconsistent with other provisions of this title.

5. Contract with other agencies, including laboratories, in furthering any department program.

6. Use monies, facilities or services to provide matching contributions under federal or other programs that further the objectives and programs of the department.

7. Accept gifts, grants, matching monies or direct payments from public or private agencies or private persons and enterprises for department services and publications and to conduct programs that are consistent with the general purposes and objectives of this chapter. Monies received pursuant to this paragraph shall be deposited in the department fund corresponding to the service, publication or program provided.

8. Provide for the examination of any premises if the director has reasonable cause to believe that a violation of any environmental law or rule exists or is being committed on the premises. The director shall give the owner or operator the opportunity for its representative to accompany the director on an

examination of those premises. Within forty-five days after the date of the examination, the department shall provide to the owner or operator a copy of any report produced as a result of any examination of the premises.

9. Supervise sanitary engineering facilities and projects in this state, authority for which is vested in the department, and own or lease land on which sanitary engineering facilities are located, and operate the facilities, if the director determines that owning, leasing or operating is necessary for the public health, safety or welfare.

10. Adopt and enforce rules relating to approving design documents for constructing, improving and operating sanitary engineering and other facilities for disposing of solid, liquid or gaseous deleterious matter.

11. Define and prescribe reasonably necessary rules regarding the water supply, sewage disposal and garbage collection and disposal for subdivisions. The rules shall:

(a) Provide for minimum sanitary facilities to be installed in the subdivision and may require that water systems plan for future needs and be of adequate size and capacity to deliver specified minimum quantities of drinking water and to treat all sewage.

(b) Provide that the design documents showing or describing the water supply, sewage disposal and garbage collection facilities be submitted with a fee to the department for review and that no lots in any subdivision be offered for sale before compliance with the standards and rules has been demonstrated by approval of the design documents by the department.

12. Prescribe reasonably necessary measures to prevent pollution of water used in public or semipublic swimming pools and bathing places and to prevent deleterious conditions at those places. The rules shall prescribe minimum standards for the design of and for sanitary conditions at any public or semipublic swimming pool or bathing place and provide for abatement as public nuisances of premises and facilities that do not comply with the minimum standards. The rules shall be developed in cooperation with the director of the department of health services and shall be consistent with the rules adopted by the director of the department of health services pursuant to section 36-136, subsection I, paragraph 10.

13. Prescribe reasonable rules regarding sewage collection, treatment, disposal and reclamation systems to prevent the transmission of sewage borne or insect borne diseases. The rules shall:

(a) Prescribe minimum standards for the design of sewage collection systems and treatment, disposal and reclamation systems and for operating the systems.

(b) Provide for inspecting the premises, systems and installations and for abating as a public nuisance any collection system, process, treatment plant, disposal system or reclamation system that does not comply with the minimum standards.

(c) Require that design documents for all sewage collection systems, sewage collection system extensions, treatment plants, processes, devices, equipment, disposal systems, on-site wastewater treatment facilities and reclamation systems be submitted with a fee for review to the department and may require that the design documents anticipate and provide for future sewage treatment needs.

(d) Require that construction, reconstruction, installation or initiation of any sewage collection system, sewage collection system extension, treatment plant, process, device, equipment, disposal system, on-site wastewater treatment facility or reclamation system conform with applicable requirements.

14. Prescribe reasonably necessary rules regarding excreta storage, handling, treatment, transportation and disposal. The rules may:

(a) Prescribe minimum standards for human excreta storage, handling, treatment, transportation and disposal and shall provide for inspection of premises, processes and vehicles and for abating as public nuisances any premises, processes or vehicles that do not comply with the minimum standards.

(b) Provide that vehicles transporting human excreta from privies, septic tanks, cesspools and other treatment processes shall be licensed by the department subject to compliance with the rules. The department may require payment of a fee as a condition of licensure. The department may establish by rule a fee as a condition of licensure, including a maximum fee. As part of the rulemaking process, there must be public notice and comment and a review of the rule by the joint legislative budget committee. The department shall not increase that fee by rule without specific statutory authority for the increase. The fees shall be deposited, pursuant to sections 35-146 and 35-147, in the solid waste fee fund established by section 49-881.

15. Perform the responsibilities of implementing and maintaining a data automation management system to support the reporting requirements of title III of the superfund amendments and reauthorization act of 1986 (P.L. 99-499) and article 2 of this chapter.

16. Approve remediation levels pursuant to article 4 of this chapter.

17. Establish or revise fees by rule pursuant to the authority granted under title 44, chapter 9, article 8 and chapters 4 and 5 of this title for the department to adequately perform its duties. All fees shall be fairly assessed and impose the least burden and cost to the parties subject to the fees. In establishing or revising fees, the department shall base the fees on:

(a) The direct and indirect costs of the department's relevant duties, including employee salaries and benefits, professional and outside services, equipment, in-state travel and other necessary operational expenses directly related to issuing licenses as defined in title 41, chapter 6 and enforcing the requirements of the applicable regulatory program.

(b) The availability of other funds for the duties performed.

(c) The impact of the fees on the parties subject to the fees.

(d) The fees charged for similar duties performed by the department, other agencies and the private sector.

18. Appoint a person with a background in oil and gas conservation to act on behalf of the oil and gas conservation commission and administer and enforce the applicable provisions of title 27, chapter 4 relating to the oil and gas conservation commission.

C. The department may:

1. Charge fees to cover the costs of all permits and inspections it performs to ensure compliance with rules adopted under section 49-203, except that state agencies are exempt from paying those fees that are not associated with the dredge and fill permit program established pursuant to chapter 2, article 3.2 of this title. For services provided under the dredge and fill permit program, a state agency shall pay either:

(a) The fees established by the department under the dredge and fill permit program.

(b) The reasonable cost of services provided by the department pursuant to an interagency service agreement.

2. Monies collected pursuant to this subsection shall be deposited, pursuant to sections 35-146 and 35-147, in the water quality fee fund established by section 49-210.

3. Contract with private consultants for the purposes of assisting the department in reviewing applications for licenses, permits or other authorizations to determine whether an applicant meets the criteria for issuance of the license, permit or other authorization. If the department contracts with a consultant under this paragraph, an applicant may request that the department expedite the application review by requesting that the department use the services of the consultant and by agreeing to pay the department the costs of the consultant's services. Notwithstanding any other law, monies paid by applicants for expedited reviews pursuant to this paragraph are appropriated to the department for use in paying consultants for services.

D. The director may:

1. If the director has reasonable cause to believe that a violation of any environmental law or rule exists or is being committed, inspect any person or property in transit through this state and any vehicle in which the person or property is being transported and detain or disinfect the person, property or vehicle as reasonably necessary to protect the environment if a violation exists.

2. Authorize in writing any qualified officer or employee in the department to perform any act that the director is authorized or required to do by law.

49-106. Statewide application of rules

The rules adopted by the department apply and shall be observed throughout this state, or as provided by their terms, and the appropriate local officer, council or board shall enforce them. This section does not limit the authority of local governing bodies to adopt ordinances and rules within their respective jurisdictions if those ordinances and rules do not conflict with state law and are equal to or more restrictive than the rules of the department, but this section does not grant local governing bodies any authority not otherwise provided by separate state law.

49-112. County regulation; standards

A. When authorized by law, a county may adopt a rule, ordinance or regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following requirements are met:

1. The rule, ordinance or regulation is necessary to address a peculiar local condition.

2. There is credible evidence that the rule, ordinance or regulation is either:

(a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.

(b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or regulation is equivalent to federal statutes or regulations.

3. Any fee or tax adopted under the rule, ordinance or regulation does not exceed the reasonable costs of the county to issue and administer the permit or plan approval program.

B. When authorized by law, a county may adopt rules, ordinances or regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

C. A county that adopts rules, ordinances or regulations pursuant to subsection B of this section and that at any time cannot comply with subsection B of this section shall prepare and file a notice of noncompliance with the director. The county shall post a copy of the notice of noncompliance on the county's website with a date stamp of the date of posting. If the county does not comply with subsection B of this section within one year after posting of the notice on the county's website, the director shall provide written notice to and assert regulatory jurisdiction over those persons and entities subject to the affected county rules, ordinances or regulations.

D. Except as provided in chapter 3, article 3 of this title, before adopting or enforcing any rule, ordinance or regulation pursuant to subsection A or B of this section, the county shall comply with the following requirements:

1. Prepare a notice of proposed rulemaking to include the proposed rule, ordinance or regulation. This notice shall demonstrate evidence of compliance with subsection A or B of this section. The notice shall include the name, address and phone number of a person who can answer questions about the proposed rule, ordinance or regulation and accept any written requests for the county to conduct an oral Proceeding. The county shall post the notice on the county's website with a date stamp of the date of posting. The county shall publish the availability of the notice of the proposed rule, ordinance or regulation in a newspaper of general circulation in the county. If there is no newspaper of general circulation in the county, the county shall publish the notice in a newspaper of general circulation in an adjoining county. If requested by the public, the county shall make available a paper copy of the notice at a reasonable cost.

2. For at least thirty days after the posting of the notice of the proposed rule, ordinance or regulation, afford persons the opportunity to submit in writing comments, statements, arguments, data and views on the proposed rule, ordinance or regulation.

3. Respond in writing to the comments submitted pursuant to paragraph 2 of this subsection and post the county's response on the county's website. If requested by the public, the county shall make paper copies of its comments available at a reasonable cost.

4. Schedule a public hearing on the proposed rule, ordinance or regulation if a written request for an oral proceeding is submitted to the county during the thirty-day comment period. The county shall post the notice of oral proceeding on a proposed rule, ordinance or regulation on the county's website. The county shall post the notice of oral proceeding at least twenty days before the date of the oral proceeding. The county shall publish notice of any public hearing required pursuant to this paragraph in any newspaper as prescribed by this title or county ordinance. The county shall select a time and location for the public hearing that affords a reasonable opportunity for the public to participate.

E. A county is not required to comply with subsection D, paragraphs 2, 3 and 4 of this section before it adopts or enforces a rule, ordinance or regulation if the rule, ordinance or regulation only incorporates by reference an existing state or federal rule or law that provides greater regulatory flexibility for regulated parties and otherwise satisfies the requirements prescribed in subsection B of this section.

F. Until June 30, 1995, a person may file with the clerk of the board of supervisors for that county a petition challenging a county rule, ordinance or regulation adopted before July 15, 1994 for compliance with the criteria set forth in subsection A or B of this section. The petition shall contain the grounds for challenging the specific county rule, ordinance or regulation. Within one year after the petition is filed, the board of supervisors shall review the challenged rule, ordinance or regulation and make a written demonstration of compliance with the criteria set forth in subsection A or B of this section and challenged in the petition. Any rules, ordinances or regulations that have been challenged and for which the board of supervisors has not made the written demonstration within one year after the filing of the petition required by this section become unenforceable as of that date. If a county has already made a written demonstration under section 49-479, subsection C, for a rule, ordinance or regulation, the person filing the petition shall state the specific grounds in the petition why that demonstration does not meet the requirements of this section.

G. A rule, ordinance or regulation adopted pursuant to subsection A of this section may not be invalidated subsequent to its adoption on the grounds that the economic feasibility analysis is insufficient or inaccurate if a county makes a good faith effort to comply with the economic feasibility requirement of subsection A, paragraph 2, subdivision (a), of this section and has explained in the written statement, made public pursuant to subsection D of this section, the methodology used to satisfy the economic feasibility requirement.

H. This section shall not apply to any rule, ordinance or regulation adopted by a county pursuant to:

1. Title 36 for which the state has similar statutory or rule making authority in this title.
2. Section 49-391.
3. Chapter 3, article 8 of this title.
4. Chapter 4, article 3 of this title and section 49-765.

5. Nonsubstantive rules relating to the application process that have a de minimis economic effect on regulated parties.

Chapter 3 – AIR QUALITY

Article 1 – General Provisions

49-402. State and county control

A. The department shall have original jurisdiction over such sources, permits and violations that pertain to:

1. Major sources in any county that has not received approval from the administrator for new source review under the clean air act and prevention of significant deterioration under the clean air act.
2. Smelting of metal ore.
3. Petroleum refineries.
4. Coal fired electrical generating stations.
5. Portland cement plants.
6. Air pollution by portable sources.
7. Air pollution by mobile sources for the purpose of regulating those sources as prescribed by article 5 of this chapter and consistent with the clean air act.
8. Sources that are subject to title V of the clean air act and that are located in a county for which the administrator has disapproved that county's title V permit program if the department has a title V program that has been approved by the administrator. On approval of that county's title V permit program by the administrator, the county shall resume jurisdiction over those sources.

B. Except as specified in subsection A of this section, the review, issuance, administration and enforcement of permits issued pursuant to this chapter shall be by the county or multi-county air quality control region pursuant to the provisions of article 3 of this chapter. After the director has provided prior written notice to the control officer describing the reason for asserting jurisdiction and has provided an opportunity to confer, the county or multi-county air quality control region shall relinquish jurisdiction, control and enforcement over such permits as the director designates and at such times as the director asserts jurisdiction at the state level. The order of the director which asserts state jurisdiction shall specify the matters, geographical area, or sources over which the department shall exercise jurisdiction and control. Such state authority shall then be the sole and exclusive jurisdiction and control to the extent asserted, and the provisions of this chapter shall govern, except as provided in this chapter, until jurisdiction is surrendered by the department to such county or region.

C. Portable sources under jurisdiction of the department under subsection A, paragraph 6 of this section may be required to file notice with the director and the control officer who has jurisdiction over the geographic area that includes the new location before beginning operations at that new location.

D. Notwithstanding any other law, a permit issued to a state regulated source shall include the emission standard or standard of performance adopted pursuant to section 49-479, if such standards are more stringent than those adopted by the director and if such standards are specifically identified as applicable to the permitted source or a component of the permitted source. Such standards shall be applied to sources identified in subsection A, paragraph 2, 3, 4 or 5 of this section only if the standard is formally proposed for adoption as part of the state implementation plan.

E. The regional planning agency for each county which contains a vehicle emissions control area shall develop plan revisions containing transportation related air quality control measures designed to attain and maintain primary and secondary ambient air quality standards as prescribed by and within the time frames specified in the clean air act. In developing the plan revisions, the regional planning agency shall consider all of the following:

1. Mandatory employee parking fees.
2. Park and ride programs.
3. Removal of on-street parking.
4. Ride share programs.
5. Mass transit alternatives.
6. Expansion of public transportation systems.
7. Optimizing freeway ramp metering.
8. Coordinating traffic signal systems.
9. Reduction of traffic congestion at major intersections.
10. Site specific transportation control measures.
11. Reversible lanes.
12. Fixed lanes for buses and carpools.
13. Encouragement of pedestrian travel.
14. Encouragement of bicycle travel.
15. Development of bicycle travel facilities.
16. Employer incentives regarding ride share programs.

17. Modification of work schedules.

18. Strategies for controlling the generation of air pollution by nonresidents of nonattainment or maintenance areas.

19. Use of alternative fuels.

20. Use of emission control devices on public diesel powered vehicles.

21. Paving of roads.

22. Restricting off-road vehicle travel.

23. Construction site air pollution control.

24. Other air quality control measures.

F. Each regional planning agency shall consult with the department of transportation to coordinate the plans developed pursuant to subsection E of this section with transportation plans developed by the department of transportation pursuant to any other law.

49-404. State implementation plan

A. The director shall maintain a state implementation plan that provides for implementation, maintenance and enforcement of national ambient air quality standards and protection of visibility as required by the clean air act.

B. The director may adopt rules that describe procedures for adoption of revisions to the state implementation plan.

C. The state implementation plan and all revisions adopted before September 30, 1992 remain in effect according to their terms, except to the extent otherwise provided by the clean air act, inconsistent with any provision of the clean air act, or revised by the administrator. No control requirement in effect, or required to be adopted by an order, settlement agreement or plan in effect, before the enactment of the clean air act in any area which is a nonattainment or maintenance area for any air pollutant may be modified after enactment in any manner unless the modification insures equivalent or greater emission reductions of the air pollutant. The director shall evaluate and adopt revisions to the plan in conformity with federal regulations and guidelines promulgated by the administrator for those purposes until the rules required by subsection B are effective.

49-406. Nonattainment area plan

A. For any ozone, carbon monoxide or particulate nonattainment or maintenance area the governor shall certify the metropolitan planning organization designated to conduct the continuing, cooperative and

comprehensive transportation planning process for that area under 23 United States Code section 134 as the agency responsible for the development of a nonattainment or maintenance area plan for that area.

B. For any ozone, carbon monoxide or particulate nonattainment or maintenance area for which no metropolitan planning organization exists, the department shall be certified as the agency responsible for development of a nonattainment or maintenance area plan for that area.

C. For any ozone, carbon monoxide or particulate nonattainment or maintenance area, the department, the planning agency certified pursuant to subsection A of this section on behalf of elected officials of affected local government, the county air pollution control department or district, and the department of transportation shall, by November 15, 1992, and from time to time as necessary, jointly review and update planning procedures or develop new procedures.

D. In preparing the procedures described in subsection C of this section, the department, the planning agency certified pursuant to subsection A of this section on behalf of elected officials of affected local government, the county air pollution control department or district, and the department of transportation shall determine which elements of each revised implementation plan will be developed, adopted, and implemented, through means including enforcement, by the state and which by local governments or regional agencies, or any combination of local governments, regional agencies or the state.

E. The department, the planning agency certified pursuant to subsection A of this section on behalf of elected officials of affected local government, the county air pollution control department or district, and the department of transportation shall enter into a memorandum of agreement for the purpose of coordinating the implementation of the procedures described in subsection C and D of this section.

F. At a minimum, the memorandum of agreement shall contain:

1. The relevant responsibilities and authorities of each of the coordinating agencies.
2. As appropriate, procedures, schedules and responsibilities for development of nonattainment or maintenance area plans or plan revisions and for determining reasonable further progress.
3. Assurances for adequate plan implementation.
4. Procedures and responsibilities for tracking plan implementation.
5. Responsibilities for preparing demographic projections including land use, housing, and employment.
6. Coordination with transportation programs.
7. Procedures and responsibilities for adoption of control measures and emissions limitations.
8. Responsibilities for collecting air quality, transportation and emissions data.
9. Responsibility for conducting air quality modeling.
10. Responsibility for administering and enforcing stationary source controls.

11. Provisions for the timely and periodic sharing of all data and information among the signatories relating to:

- (a) Demographics.
- (b) Transportation.
- (c) Emissions inventories.
- (d) Assumptions used in developing the model.
- (e) Results of modeling done in support of the plan.
- (f) Monitoring data.

G. Each agency that commits to implement any emission limitation or other control measure, means or technique contained in the implementation plan shall describe that commitment in a resolution adopted by the appropriate governing body of the agency. The resolution shall specify the following:

1. Its authority for implementing the limitation or measure as provided in statute, ordinance or rule.
2. A program for the enforcement of the limitation or measure.
3. The level of personnel and funding allocated to the implementation of the measure.

H. The state, in accordance with the rules adopted pursuant to section 49-404, and the governing body of the metropolitan planning organization shall adopt each nonattainment or maintenance area plan developed by a certified metropolitan planning organization. The adopted nonattainment or maintenance area plan shall be transmitted to the department for inclusion in the state implementation plan provided for under section 49-404.

I. After adoption of a nonattainment or maintenance area plan, if on the basis of the reasonable further progress determination described in subsection F of this section or other information, the control officer determines that any person has failed to implement an emission limitation or other control measure, means or technique as described in the resolution adopted pursuant to subsection G of this section, the control officer shall issue a written finding to the person, and shall provide an opportunity to confer. If the control officer subsequently determines that the failure has not been corrected, the county attorney, at the request of the control officer, shall file an action in superior court for a preliminary injunction, a permanent injunction, or any other relief provided by law.

J. After adoption of a nonattainment or maintenance area plan, if, on the basis of the reasonable further progress determination described in subsection F of this section or other information, the director determines that any person has failed to implement an emission limitation or other control measure, means or technique as described in the resolution adopted pursuant to subsection G of this section, and that the control officer has failed to act pursuant to subsection I of this section, the director shall issue a written finding to the person and shall provide an opportunity to confer. If the director subsequently determines that the failure has not been corrected, the attorney general, at the request of the director, shall file an action in superior court for a preliminary injunction, a permanent injunction, or any other relief provided by law.

K. Notwithstanding subsections A and B of this section, in any metropolitan area with a metropolitan statistical area population of less than two hundred fifty thousand persons, the governor shall designate an agency that meets the criteria of section 174 of the clean air act and that is recommended by the city that causes the metropolitan area to exist and the affected county. That agency shall prepare and adopt the nonattainment or maintenance area plan. If the governor does not designate an agency, the department shall be certified as the agency responsible for the development of a nonattainment or maintenance area plan for that area.

Article 2 – State Air Pollution Control

49-425. Rules; hearing

A. The director shall adopt such rules as he determines are necessary and feasible to reduce the release into the atmosphere of air contaminants originating within the territorial limits of the state or any portion thereof and shall adopt, modify, and amend reasonable standards for the quality of, and emissions into, the ambient air of the state for the prevention, control and abatement of air pollution. Additional standards shall be established for particulate matter emissions, sulfur dioxide emissions, and other air contaminant emissions determined to be necessary and feasible for the prevention, control and abatement of air pollution. In fixing such ambient air quality standards, emission standards or standards of performance, the director shall give consideration but shall not be limited to the relevant factors prescribed by the clean air act.

B. No rule may be enacted or amended except after the director first holds a public hearing after twenty days' notice of such hearing. The proposed rule, or any proposed amendment of a rule, shall be made available to the public at the time of notice of such hearing.

C. The department shall enforce the rules adopted by the director.

D. All rules enacted pursuant to this section shall be made available to the public at a reasonable charge upon request.

Article 3 – County Air Pollution Control

49-471.04. Notice of proposed rule or ordinance making

A. Before a board of supervisors acts on a rule or ordinance that is subject to section 49-112, subsection A or a rule or ordinance that does not otherwise qualify under section 49-471.08, subsection A, a control officer shall:

1. Prepare a notice of a proposed rule or ordinance making. The notice shall include both:

(a) A preamble as prescribed in section 49-471.05.

(b) The full text of the rule or ordinance, including the intended actions to make new sections or amend, repeal or renumber the sections of the rule or ordinance.

2. Post the notice of the proposed rule or ordinance making on the county's website. On posting, the control officer shall notify by first class mail, fax or e-mail each person who has made a timely request to the county for notification of the proposed rule or ordinance making and to each person who has requested notification of all proposed rule or ordinance makings. A county may provide the notification prescribed in this paragraph in a periodic newsletter. A control officer may purge the list of persons who requested notification of proposed rule or ordinance makings once each year by providing notice of the purge in the manner prescribed in this paragraph.

B. Before making, amending, repealing or renumbering a rule or ordinance pursuant to section 49-112, subsection B, a control officer and board of supervisors shall follow the procedure established in this section or in section 49-471.08.

C. The county may terminate a notice of proposed rule or ordinance making at any time during the rule or ordinance making process and shall publish the notice of termination on the county's website.

D. If the county determines that there is a substantial change between the proposed rule or ordinance making and a final rule or ordinance making, the county shall prepare a notice of supplemental proposed rule or ordinance making for public review pursuant to the requirements under subsection A, paragraphs 1 and 2 of this section.

49-479. Rules; hearing

A. The board of supervisors shall adopt such rules as it determines are necessary and feasible to control the release into the atmosphere of air contaminants originating within the territorial limits of the county or multi-county air quality control region in order to control air pollution, which rules, except as provided in subsection C shall contain standards at least equal to or more restrictive than those adopted by the director. In fixing such standards, the board or region shall give consideration but shall not be limited to:

1. The latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on health and welfare which may be expected from the presence of an air pollution agent, or combination of agents in the ambient air, in varying quantities.

2. Atmosphere conditions and the types of air pollution agent or agents which, when present in the atmosphere, may interact with another agent or agents to produce an adverse effect on public health and welfare.

3. Securing, to the greatest degree practicable, the enjoyment of the natural attractions of the state and the comfort and convenience of the inhabitants.

B. No rule may be enacted or amended except after the board of supervisors first holds a public hearing after twenty days' notice of such hearing. The proposed rule, or any proposed amendment of a rule, shall be made available to the public at the time of notice of such hearing.

C. A county may adopt or amend a rule, emission standard, or standard of performance that is as stringent or more stringent than a rule, emission standard or standard of performance for similar sources adopted by the director only if the county complies with the applicable provisions of section 49-112.

D. All rules enacted pursuant to this section shall be made available to the public at a reasonable charge upon request.

Note: The Arizona Revised Statutes have been updated to include the revised sections from the 53rd Legislature, 2nd Regular Session.

Exhibit B-III: Public Notice and Affidavit of Publication

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Ajo Copper News

Hollister David, Publisher
Gabrielle David, Editor
Rayetta Legge, Office Manager

P. O. Box 39 • Ajo, Arizona 85321
Phone (520) 387-7688
FAX (520) 387-7505

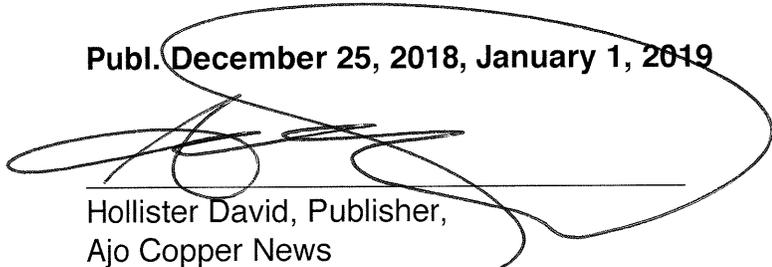
STATE OF ARIZONA)
) ss.
COUNTY OF PIMA)

Hollister David deposes and says that he is the publisher of the *Ajo Copper News*, a weekly newspaper of general circulation and established character, published weekly at Ajo, Pima County, Arizona, and that

PUBLIC COMMENT PERIOD AND HEARING: PROPOSED AJO PM₁₀ REDESIGNATION REQUEST AND MAINTENANCE PLAN STATE IMPLEMENTATION PLAN REVISION

a correct copy of which is attached to this affidavit, was published in the said *Ajo Copper News* every week in the newspaper proper and not in a supplement for

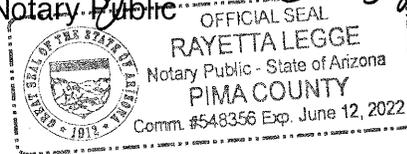
Publ. December 25, 2018, January 1, 2019



Hollister David, Publisher,
Ajo Copper News

Sworn to and subscribed before me, a Notary Public in and for the County of Pima, Arizona, this 2nd day of January, 2018.

Rayetta Legge
Notary Public



PUBLIC COMMENT PERIOD AND HEARING: PROPOSED AJO PM₁₀ REDESIGNATION REQUEST AND MAINTENANCE PLAN STATE IMPLEMENTATION PLAN REVISION

The Air Quality Division of the Arizona Department of Environmental Quality (ADEQ) welcomes comments on the proposed Ajo PM₁₀ Redesignation Request and Maintenance Plan. The plan demonstrates that the Ajo area has attained the 1987 24-hour PM₁₀ National Ambient Air Quality Standards (NAAQS) and will continue to maintain the standards through 2031. ADEQ is requesting that the U.S. Environmental Protection Agency (EPA) approve the proposed maintenance plan as a revision to the Arizona State Implementation Plan (SIP) and redesignate the Ajo nonattainment area to attainment for the PM₁₀ NAAQS. Because the NAAQS for total suspended particulates (TSP) have been replaced, ADEQ is also requesting that EPA delete the TSP nonattainment designation for the Ajo area.

Comments will be accepted between December 26, 2018, and January 24, 2019. Comments may be mailed, faxed, or emailed to Bruce Friedl, Air Quality Division, Air Quality Improvement Planning Section, Arizona Department of Environmental Quality, 1110 W. Washington St., Phoenix, AZ 85007; fax (602) 771-2299; email friedl.bruce@azdeq.gov. ADEQ will address comments applicable to the proposed SIP revision.

Comments are also welcome at the public hearing held on January 24, 2019, at 2 p.m., at the Salazar-Ajo Branch of the Pima County Public Library, 15 W. Plaza St., #179, Ajo, Arizona 85321. Comments must be received no later than January 24, 2019, by 5:00 p.m., or submitted at the public hearing. Mailed comments must be postmarked by January 24, 2019. To request auxiliary aid or service for accessible communication, call (602) 771-2215, email idb@azdeq.gov, or dial 7-1-1 for TTY/TTD Services.

Review the SIP revision online at: <http://azdeq.gov/notice> or at the ADEQ Records Center, 1110 W. Washington St., Phoenix, AZ 85007. For Records Center hours or appointment scheduling, call (602) 771-4380 or (800) 234-5677 ext. 6027714380. A copy of the proposal can also be viewed at the Pima County Public Library, Salazar-Ajo Branch, 15 W. Plaza St., #179, Ajo, Arizona 85321. For hours, call (520) 387-6075.

For more information, contact Bruce Friedl at (602) 771-2259 or friedl.bruce@azdeq.gov.

(Published December 25, 2018, January 1, 2019)
AZ Dept- Redesignation Request 181225 RKL

ARIZONA DAILY STAR

Tucson, Arizona

STATE OF ARIZONA)
COUNTY OF PIMA)

Jennie Silvas, being first duly sworn deposes and says: that she is the Advertising Representative of **TNI PARTNERS**, a General Partnership organized and existing under the laws of the State of Arizona, and that it prints and publishes the Arizona Daily Star, a daily newspaper printed and published in the City of Tucson, Pima County, State of Arizona, and having a general circulation in said City, County, State and elsewhere, and that the attached ad was printed and

Legal Notice

published correctly in the entire issue of the said Arizona Daily Star on each of the following dates, to-wit:

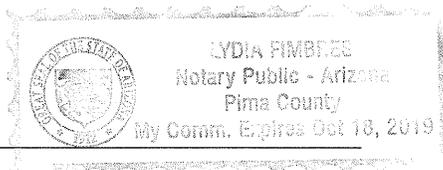
DECEMBER 26 & 27, 2018

Jennie Silvas

Subscribed and sworn to before me this 28th day of December 2018

Lydia Fimbee

Notary Public



My commission expires _____

AD NO. 8849857

PUBLIC COMMENT PERIOD AND HEARING: PROPOSED AJO PM10 REDESIGNATION REQUEST AND MAINTENANCE PLAN STATE IMPLEMENTATION PLAN REVISION

The Air Quality Division of the Arizona Department of Environmental Quality (ADEQ) welcomes comments on the proposed Ajo PM10 Redesignation Request and Maintenance Plan. The plan demonstrates that the Ajo area has attained the 1987 24-hour PM10 National Ambient Air Quality Standards (NAAQS) and will continue to maintain the standards through 2031. ADEQ is requesting that the U.S. Environmental Protection Agency (EPA) approve the proposed maintenance plan as a revision to the Arizona State Implementation Plan (SIP) and redesignate the Ajo nonattainment area to attainment for the PM10 NAAQS. Because the NAAQS for total suspended particulates (TSP) have been replaced, ADEQ is also requesting that EPA delete the TSP nonattainment designation for the Ajo area.

Comments will be accepted between December 26, 2018, and January 24, 2019. Comments may be mailed, faxed, or emailed to Bruce Friedl, Air Quality Division, Air Quality Improvement Planning Section, Arizona Department of Environmental Quality, 1110 W. Washington St., Phoenix, AZ 85007; fax (602) 771-2299; email friedl.bruce@azdeq.gov. ADEQ will address comments applicable to the proposed SIP revision.

Comments are also welcome at the public hearing held on January 24, 2019, at 2 p.m., at the Salazar-Ajo Branch of the Pima County Public Library, 15 W. Plaza St., #179, Ajo, Arizona 85321. Comments must be received no later than **January 24, 2019, by 5:00 p.m.**, or submitted at the public hearing. Mailed comments must be postmarked by January 24, 2019. To request auxiliary aid or service for accessible communication, call (602) 771-2215, email idb@azdeq.gov, or dial 7-1-1 for TTY/TTD Services.

Review the SIP revision online at: <http://azdeq.gov/notices> or at the ADEQ Records Center, 1110 W. Washington St., Phoenix, AZ 85007. For Records Center hours or appointment scheduling, call (602) 771-4380 or (800) 234-5677 ext. 6027714380. A copy of the proposal can also be viewed at the Pima County Public Library, Salazar-Ajo Branch, 15 W. Plaza St., #179, Ajo, Arizona 85321. For hours, call (520) 387-6075.

For more information, contact Bruce Friedl at (602) 771-2259 or friedl.bruce@azdeq.gov.

Publish December 26 & 27, 2018
Arizona Daily Star

Exhibit B-IV: Public Hearing Agenda

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AIR QUALITY DIVISION PUBLIC HEARING

**Proposed
Ajo PM₁₀ Redesignation Request and Maintenance Plan**

**Pima County Public Library, Salazar-Ajo Branch
15 W. Plaza St., #179, Ajo, Arizona
2:00 p.m.
January 24, 2019**

Pursuant to 40 CFR 51.102 notice is hereby given that the above referenced meeting is open to the public.

1. Welcome and Introductions
2. Purpose of the Oral Proceedings
3. Procedure for Making Public Comment
4. Brief Overview of the Proposal
5. Oral Comment Period
6. Adjournment of Oral Proceeding

During the 30-day comment period, the proposal is available online at <http://www.azdeq.gov/> in Public Notices, Meetings, and Hearings. The proposal is also available at the ADEQ Records Center, 1110 W. Washington St., Phoenix, AZ 85007, (602) 771-4380 or (800) 234-5677 ext. 6027714380. A copy of the proposal can also be viewed at the Pima County Public Library, Salazar-Ajo Branch, 15 W. Plaza St., #179, Ajo, Arizona 85321, (520) 387-6075.

Written comments may be mailed to Bruce Friedl, Air Quality Division, Air Quality Improvement Planning Section, Arizona Department of Environmental Quality, 1110 W. Washington St., Phoenix, AZ 85007. Comments may also be emailed to friedl.bruce@azdeq.gov. All comments must state the name and mailing address of the person; be signed by the person, their agent, or attorney; and clearly set forth reasons why the proposed revisions should or should not be finalized. The public comment period closes January 24, 2019, at 5:00 pm. Mailed comments must be postmarked by January 24, 2019. For additional information regarding the hearing please contact Bruce Friedl, ADEQ Air Quality Division, at 602-771-2259.

ADEQ will take reasonable measures to provide access to department services to individuals with limited ability to speak, write or understand English and/or to those with disabilities. Requests for language interpretation, ASL interpretation, CART captioning services or disability accommodations must be made at least 48 hours in advance by contacting Ian Bingham, Title VI Nondiscrimination Coordinator at 602-771-4322 or idb@azdeq.gov. Teleprinter services are available by calling 7-1-1 at least 48 hours in advance to make necessary arrangements.

ADEQ tomará las medidas razonables para proveer acceso a los servicios del departamento a personas con capacidad limitada para hablar, escribir o entender inglés y / o para personas con discapacidades. Las solicitudes de servicios de interpretación de idiomas, interpretación ASL, subtítulos de CART, o adaptaciones por discapacidad deben realizarse con al menos 48 horas de anticipación contactando a Ian Bingham, Coordinador de Anti-Discriminación del Título VI al 602-771-4322 o ibd@azdeq.gov. Los servicios de teleimpresores están disponibles llamando al 7-1-1 con al menos 48 horas de anticipación para hacer los arreglos necesarios.

Exhibit B-V: Public Hearing Sign-in Sheet

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EVENT: Ajo PM₁₀ Redesignation Request
and Maintenance Plan Public
DATE: January 24, 2019
TIME: 2 pm
Hearing

Name	Organization	Phone	Email
1. Todd Weaver	Frequent-Mile.com	602-366-7818	tweaver.1@fmi.com
2. Brian Parkey	FCX	480-262-8353	BParkey@fmi.com
3. Mike Sonenberg	ADEQ	602-771-4106	ms23@adeq.gov
4. Cody Martinez	FCX	520-237-7309	cmartinez@fmi.com
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EVENT: _____

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Exhibit B-VI: Public Hearing Officer Certification

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Air Quality Division

Public Hearing Presiding Officer Certification

I, Wayne Bixler, the designated Presiding Officer, do hereby certify that the public hearing for the proposed Ajo PM₁₀ Redesignation Request and Maintenance Plan was held by the Arizona Department of Environmental Quality on January 24, 2019, at the Salazar-Ajo Branch of the Pima County Public Library, 15 W. Plaza St., #179, Ajo, Arizona, 85321. The public hearing was conducted in accordance with public notice requirements by publication in the *Arizona Daily Star* on December 26 and 27, 2018, and the *Ajo Copper News* on December 25, 2018, and January 1, 2019. Furthermore, I do hereby certify that the public hearing was recorded from the opening of the public record through concluding remarks and adjournment, and the transcript provided contains a full, true, and correct record of the above-referenced public hearing.

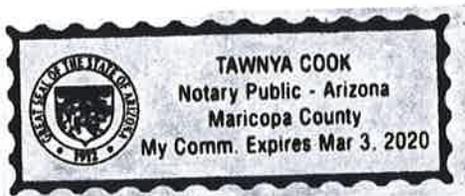
Dated this 25th day of JANUARY 2019.

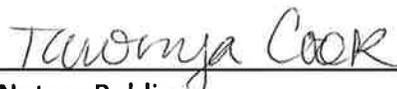


Signature of Hearing Officer

State of Arizona)
) ss.
County of Maricopa)

Subscribed and sworn to before me on this 25th day of January 2019.





Notary Public

My commission expires: 3/3/2020

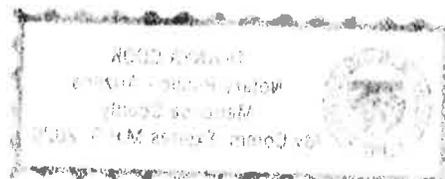


Exhibit B-VII: Public Hearing Transcript

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1 **Oral Proceeding**
2 **Transcript**

3
4 PROPOSED
5 STATE IMPLEMENTATION PLAN REVISION
6 AJO PM₁₀

7 Thursday, January 24, 2019

8
9 Wayne Bixler: Welcome and thank you for coming. I now open this hearing on the proposed Ajo
10 PM₁₀ Redesignation Request and Maintenance Plan.

11
12 This proceeding is being recorded and will be preserved for the record.

13
14 Today is January 24, 2019, and the time is 2:07 p.m. The location is the Salazar-Ajo Branch of the
15 Pima County Public Library, 15 W. Plaza St., #179, Ajo, Arizona. My name is Wayne Bixler, and I
16 have been appointed by the Director of the Arizona Department of Environmental Quality (ADEQ)
17 to preside at this hearing.

18
19 Seeing no one in attendance, the time is now 2:07 p.m., and I

20
21 Bruce Friedl: Nope, nope, we're this, you skip to that if nobody's here, then you go right here.

22
23 Mr. Bixler: Oh, I'm sorry, okay, a new script.

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Mr. Friedl: That’s okay, sorry.

Mr. Bixler: The purposes of this hearing are to provide the public an opportunity to hear an overview of the proposed State Implementation Plan (SIP) revision and to make comments concerning the proposed plan on the record.

Public notice of the comment period and hearing was published in the *Ajo Copper News*, the *Arizona Daily Star*, and on ADEQ’s Website. Copies of the proposal were made available on ADEQ’s website, at the ADEQ Phoenix Records Center, and the Salazar-Ajo Library beginning December 26, 2018, and will remain available until the close of comment period, which is 5:00 p.m. today.

The Department’s representatives for today’s hearing are Jessica Wood and Bruce Friedl of the Air Quality Division’s Air Quality Improvement Planning Section.

If you wish to make a verbal comment, please fill out a speaker slip, available at the sign-in table, and give it to a Department representative. You may also submit written comments during today’s hearing. Comments may also be mailed to Bruce Friedl, Air Quality Division, Air Quality Improvement Planning Section, Arizona Department of Environmental Quality, 1110 W. Washington St., Phoenix, AZ 85007, or emailed to friedl.bruce@azdeg.gov . Refer to the hearing agenda for additional submission details. Mailed comments must be postmarked, postmarked by January 24, 2019.

1 Comments received during the formal comment period are required by law to be considered by
2 the Department in the final decision on the proposed SIP revision and will be included as part of
3 the Department's responsiveness summary of written and verbal comments received during the
4 formal comment period.

5

6 The agenda for this hearing is as follows.

7 First, we will present a brief overview of the proposal.

8 Then I will conduct the oral comment portion of the hearing. At that time, I will call speakers in
9 the order that I have received speaker slips.

10 Please be aware that any comments at today's hearing that you want the Department to formally
11 consider must be given either in writing or on the record during the oral comment period of this
12 proceeding.

13

14 At this time, Bruce Friedl will give a brief overview of the proposed SIP revision.

15

16 * * * * *

17

18 Mr. Friedl: Thanks, Wayne.

19

20 In 1987 the U.S. Environmental Protection Agency (EPA) made revisions to the National
21 Ambient Air Quality Standards (or NAAQS) for particulate matter (or PM) by replacing the
22 total suspended particulates (TSP) air quality standards with a new indicator for
23 particulate matter, PM₁₀. PM₁₀ refers to particulate matter that is less than or equal to
24 10 micrometers. Following the Clean Air Act amendments of 1990, EPA designated an

1 area in northwest Pima County as a “moderate” nonattainment area for the 1987 24-hour
2 PM₁₀ standard by operation of law. EPA based its designation on recorded violations of
3 the standard at an ambient monitoring site in the Ajo area.

4 Historically, the primary point sources of PM₁₀ emissions in the Ajo nonattainment area
5 were fugitive dust from tailings piles, mining, milling, and smelting processes at the Ajo
6 copper mine and smelter. Additional sources included a slag reprocessing facility,
7 vehicular traffic on Highway 85, a landfill, unpaved roads, construction, and windblown
8 dust from open areas.

9 Stabilization of the local mine tailings and slag reprocessing area have contributed in no
10 recorded exceedances of the PM₁₀ NAAQS for 26 of the last 28 years. A new fugitive dust
11 rule, Pima County Code 17.16.125, ensures that emissions reductions achieved by local
12 sources will continue into the future.

13 This proposed SIP revision demonstrates that all Clean Air Act requirements for
14 redesignation to attainment have been satisfied. The clean air quality record, enforceable
15 control measures, and projections of future emissions all show that the area will continue
16 to maintain the PM₁₀ air quality standards through 2031.

17 The Ajo PM₁₀ plan will be submitted to the U.S. Environmental Protection Agency as a
18 revision to Arizona’s State Implementation Plan with a request that EPA approve the
19 enclosed maintenance plan and redesignate the Ajo nonattainment area to attainment
20 for the 24-hour PM₁₀ NAAQS or air quality standard.

21 Prior to its designation as nonattainment for the 1987 PM₁₀ standards, the Ajo area was
22 designated as not meeting the total suspended particulates air quality standards. ADEQ
23 is not aware of any relevant measures that are contingent upon continuation of the TSP
24 nonattainment designation or that would cause a relaxation of control strategies in the
25 area if the TSP designation were deleted. Therefore, ADEQ is also requesting that EPA
26 remove the total suspended particulates nonattainment designation for the Ajo area.

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Mr. Bixler: Thank you Bruce. This concludes the overview portion of this proceeding.

* * * * *

I now open this proceeding for oral comments.

Seeing no speaker slips, is there anyone present who would like to make an oral comment?

Having no response, this concludes the oral comment portion of this proceeding.

* * * * *

If you have not already submitted written comments, you may submit them at this time. Again, the comment period for this proposal ends today, Thursday, January 24, 2019, at 5:00 p.m.

Thank you for attending.

The time is now 2:14, and I close this oral proceeding.

Exhibit B-VIII: Compilation of Comments and State Responses

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Responsiveness Summary

**Response to Testimony Taken at the Oral Proceeding and Written Comments Received on the
Ajo PM₁₀ Redesignation Request and Maintenance Plan
State Implementation Plan Revision**

The oral proceeding on the proposed State Implementation Plan (SIP) revision was held on Thursday, January 24, 2019, 2:07 p.m., at the Salazar-Ajo Branch of the Pima County Public Library, 15 W. Plaza St., #179, Ajo, Arizona 85321. The public comment period began on December 26, 2018, and closed on January 24, 2019, at 5:00 p.m. The Arizona Department of Environmental Quality (ADEQ) received no verbal or written comments on the proposed SIP revision.

Although no changes were made in response to public comments received, during its final review of the plan ADEQ made minor changes for clarity and to correct grammatical and formatting errors.

Additionally, at the time this SIP revision was posted for public comment, the rulemaking process for Pima County Code 17.16.125 had not yet been completed and the proposed SIP contained only the Notice of Proposed Rulemaking. The rule was approved by the Pima County Board of Supervisors on January 22, 2019, with an effective date of February 21, 2019. No changes were made from the proposed to the final version of the rule. See Appendix C for details of the rulemaking process.

A final version of the regulation is included in this submittal as codified in Pima County Code. Therefore, Sections 1.2 and 4.2 of the final SIP were updated to reflect completion of the County rulemaking.

**Appendix C: Rules for Approval – Pima County Code Section 17.16.125
and County Process Documentation**

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33 N. Stone Avenue, Suite 700
Tucson, Arizona 85701-1429
www.pima.gov

Ursula Kramer Nelson, P.E.
Director

(520) 724-7400
FAX (520) 838-7432

April 19, 2019

Misael Cabrera, PE
Director
Arizona Department of Environmental Quality
1110 W Washington St
Phoenix, AZ 85007

Subject: Pima County SIP Revision Request

Dear Mr. Cabrera,

The Pima County Department of Environmental Quality (PDEQ) is submitting Pima County Code (PCC) Section 17.16.125 for incorporation into the Arizona State Implementation Plan (SIP). The intention of this incorporation is to meet SIP requirements to provide permanent and enforceable control measures for inactive tailings and slag storage area in the Ajo PM₁₀ Planning Area. Pursuant to Section 107(d)(4)(B) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) designated an area in northwest Pima County as a “moderate” nonattainment area for the 1987 24-hour Particulate Matter National Ambient Air Quality Standards (NAAQS), specifically particulate matter with a diameter of 10 micrometers or less (PM₁₀). EPA based its designation on recorded violations of the standard at an ambient monitoring site within the County. The purpose of this SIP revision is to add a specific rule for the Ajo Planning Area to meet CAA requirements for an approvable maintenance plan and have the area redesignated to attainment for the 24-hour PM₁₀ NAAQS.

PDEQ collaborated with the Arizona Department of Environmental Quality, the United States Environmental Protection Agency, and the affected owner/operator while drafting the current language of the rule. Please find the enclosed final SIP revision package for the Pima County portion of the Arizona SIP, consistent with A.R.S. § 49-479 and 40 CFR 51.

At this time PDEQ is submitting the following section of PCC Title 17:

- PCC 17.16.125 titled Inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area (within PCC 17.16 titled Emission Limiting Standards, Article III titled Emissions from Existing and New Nonpoint Sources), adopted on January 22, 2019 – Ordinance 2019-7. There is no SIP-Approved version of this rule.

This package includes the following:

Completeness Checklist

- Appendix 1 Certified Ordinance 2019-7 (Final Adopted Version)
- Appendix 2 Public Notice and Participation – PCC 17.16.125 & SIP Revision
- Appendix 3 Certified Public Hearing Documents: Agenda, Sign-in Form, Transcription

Letter to Mr. Cabrera, ADEQ
RE: Pima County SIP Revision Request – Ajo, AZ
April 19, 2019
Page Two

Thank you for your assistance in this matter.

I hereby certify that the information contained in this request is correct to the best of my current knowledge and belief. A hard copy of the SIP revision and an electronic exact duplicate of the hard copy on CD are included with this letter. If you have any questions or concerns, please do not hesitate to contact me by phone at (520) 724-7454.

Sincerely,



Ursula Kramer Nelson, P.E.
Director

Enclosure

cc: Mike Stoker, EPA Region 9 Regional Administrator
Ashley Graham, EPA Region 9
Gerardo Rios, EPA Region 9
Timothy Franquist, ADEQ Air Quality Division Director
Richard Grimaldi, Pima County DEQ Deputy Director

PIMA COUNTY STATE IMPLEMENTATION
PLAN REVISION
COMPLETENESS CHECKLIST

Pima County Department of Environmental Quality is providing the following administrative materials, and associated documentation for submission of provisions of Pima County Code (PCC) Title 17 in order to revise the Pima County portion of the Arizona State Implementation Plan (SIP).

The PCC Title 17 Rule referenced in this ‘Completeness Checklist’ is adequate to meet the requirements of the Clean Air Act (CAA) for redesignation of the Ajo PM₁₀ nonattainment area to attainment. The clean air quality record, enforceable control measures, and projections of future emissions all show that the area will continue to maintain the PM₁₀ air quality standards through 2031.

CAA § 107(d)(3)(E)(iii): Permanent and Enforceable Improvement in Air Quality – PCC Section 17.16.125 provides permanent control measure requirements which are enforceable by Pima County Department of Environmental Quality (PDEQ). PDEQ collaborated with the U.S. Environmental Protection Agency (EPA), the Arizona Department of Environmental Quality (ADEQ) and the affected owner/operator of the inactive mineral tailings impoundment and the slag storage area within the Ajo PM₁₀ Planning Area while drafting the language and final ordinance associated with this rule.

Appendix V to Part 51 of Title 40 of the Code of Federal Regulations requires certain criteria for plan submissions for review by the EPA. Criteria for plan submissions include administrative materials and technical support.

40 CFR Part 51, Appendix V - Section 2.1:

Administrative Materials

1. Formal letter of submittal – Section 2.1.a

PDEQ is submitting this plan through the ADEQ as an official revision of the Pima County portion of the Arizona SIP. ADEQ will adopt the rules into the Arizona SIP and submit this revision to the EPA including a formal letter of submittal from the Governor or his designee, requesting EPA approval of the plan or revision thereof.

2. State adoption of the plan - Section 2.1.b

PDEQ is submitting this plan through the ADEQ as an official revision of the Pima County portion of the Arizona SIP. ADEQ will then adopt the plan in the State code or body of regulations in final form as required.

3. Authority for adoption/implementation – Section 2.1.c

PDEQ is submitting this plan through the ADEQ. ADEQ is authorized to implement the Arizona SIP per Arizona Revised Statutes (A.R.S.) §§ 49.104, 49-106, 49-404, 49-406, and 49-425. PDEQ has the authority to adopt or amend rules per A.R.S. § 49-479

4. A Copy of the actual regulation, or document – Section 2.1.d

<u>Rule Number</u>	<u>Rule Title</u>	<u>Adoption Date</u>
PCC 17.16.125	Inactive mineral tailings impoundment and slag storage area within the Ajo PM ₁₀ Planning Area	01/22/2019

EPA Approved (Applicable) SIP Rules

EPA Applicable SIP Rule

No SIP-Approved version

PCC Analogous Rule

PCC 17.16.125 (Inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area)

PDEQ has included the Certified Ordinance which adopted the above listed rule (including chapter headings and the date of final adoption) in Appendix 1. For the Ordinance in this submission the Certificate of the Clerk of the Board of Supervisors of Pima County is followed by the Ordinance, including the signature page with the date of final adoption noted.

This submittal will make one change to the existing approved plan by adding PCC 17.16.125 to the Pima County portion of the Arizona State Implementation Plan.

PCC 17.16.125 - Pima County Rule submitted for inclusion in the Arizona State Implementation Plan was adopted by Ordinance 2019-7 on January 22, 2019.

The Certified Ordinance 2019-007 (Final Adopted Version) is included as Appendix 1. The Certified Ordinance is six (6) pages in its entirety, including the Certificate of the Clerk of the Board of Supervisors. Appendix 1 also contains clean text of PCC 17.16.125 which is five (5) pages in its entirety.

5. State procedural requirements – Section 2.1.e

PDEQ is submitting this plan through the ADEQ as an official revision of the Pima County portion of the Arizona State Implementation Plan. ADEQ will then adopt the plan following the procedural requirements of the State’s laws and constitution in conducting and completing the adoption/issuance of the revised SIP.

6. Public notice – Section 2.1.f

PDEQ published notices of the Notice of the Proposed SIP Revision and Notice of Proposed Rulemaking for PCC 17.16.125 on the Pima County Homepage and on the PDEQ website on October 26, 2018 and January 4, 2019 (Appendix 2: Public Notice and Public Participation). Public Notices were published on October 26, 2018 and January 4, 2019 in two local newspapers (Arizona Daily Star and the Territorial Newspaper, Appendix 2). The Public Notices were also published in the Ajo Copper News on October 30, 2018 and January 1, 2019 (Appendix 2). In addition, PDEQ e-mailed a notice of the proposed SIP Revision to interested parties who had requested notifications in the past including representatives at the U.S. EPA (Region 9), ADEQ, and other air agencies in the area (Pima Association of Governments (PAG), Maricopa County DEQ, and Pinal County DEQ) (Appendix 2). PDEQ posted a copy of the Public Notices and documentation associated with this SIP revision submittal on the Pima County website (Appendix 2).

7. Public hearing certification – Section 2.1.g

PDEQ conducted a Public Hearing on Tuesday, January 29, 2019 at 3:00 p.m. the date and time specified in the Public Notice. Public Hearing Certification Documents including hearing agenda, hearing sign in sheet, SIP Revision rule text, transcript of hearing, and the presiding officer certification for the hearing can be found in Appendix 3.

8. Public comments and Pima County responses – Section 2.1.h

PDEQ conducted a 30-day public comment period from October 26, 2018 to November 28, 2018 at 5:00 p.m. PDEQ received one (1) public comment on the proposed rulemaking. The public comment on the rulemaking and PDEQ response to the comment are included in Appendix 2: Public Notice and Public Participation. The opportunity for written and/or oral public comment was also offered at the SIP Revision Public Hearing. PDEQ did not receive comments on the proposed SIP Revision.

40 CFR Part 51 Appendix V - Section 2.2:

Technical Support:

1. Identification of pollutants regulated by the plan – 40 CFR App. V Section 2.2.a

1987 Particulate Matter (PM₁₀) National Ambient Air Quality Standards (NAAQS)

2. Identification of the location of affected sources including EPA attainment/non-attainment designation and status of attainment plan – 40 CFR App. V Section 2.2.b

PCC 17.16.125 applies to the inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area

Classifications as of February 2006:

PM₁₀ Classification: Nonattainment – Moderate

3. Quantification of the changes in plan allowable emissions – 40 CFR App. V Section 2.2.c

There are no changes in plan allowable emissions. However, ADEQ performed quantitative analyses to determine emissions reductions from the inactive mineral tailings impoundment and slag storage area rule. ADEQ notes that “Overall, closure and capping of the Ajo tailings impoundments and the slag reprocessing area provided potential emissions reductions of more than 160 tons per year (tpy) and actual emissions reductions of approximately 127 tpy” [ADEQ SIP Revision: Ajo PM₁₀ Redesignation Request and Maintenance Plan].

For further details see Section 4.3 of the ADEQ SIP Revision: Ajo PM₁₀ Redesignation Request and Maintenance Plan and the emissions inventory in Appendix A of the ADEQ SIP revision document.

4. National Ambient Air Quality Standards, Prevention of Significant Deterioration, Increments, Reasonable Further Progress Demonstration, and Visibility are protected – 40 CFR App. V Section 2.2.d

ADEQ notes in Section 5.2.1.2 of the ADEQ SIP Revision: Ajo PM₁₀ Redesignation

Request and Maintenance Plan that “EPA determined that the area has attained the 24-hour PM₁₀ NAAQS and suspended the requirements of this section (71 FR 6352, February 8, 2006).”

See Chapters 2 and 6 of the ADEQ SIP Revision: Ajo PM₁₀ Redesignation Request and Maintenance Plan and Appendix A of the ADEQ Technical Support Document for demonstrations that the PM₁₀ NAAQS have been attained and will be maintained through 2031.

5. Modeling information required to support rule revision – 40 CFR App. V Section 2.2.e

See Appendix A of the ADEQ Technical Support Document for a description of methods used to demonstrate maintenance of the NAAQS and estimate emissions in the nonattainment area.

6. Evidence that emissions limitations are based on continuous emission reduction technology - 40 CFR App. V Section 2.2.f

Emission reduction methods, or controls, are described in detail in Chapter 4 of the ADEQ SIP Revision: Ajo PM₁₀ Redesignation Request and Maintenance Plan, Permanent and Enforceable Improvement in Air Quality. Information on the demonstration of maintenance based on the described controls can be found in Chapter 6 of the ADEQ: SIP Revision: Ajo PM₁₀ Redesignation Request and Maintenance Plan and Appendix A of the ADEQ Technical Support Document.

7. Evidence that the plan contains emission limitations, work practice standards and recordkeeping/reporting requirements to ensure emission levels - 40 CFR App. V Section 2.2.g

Control strategies, including recordkeeping and reporting requirements are contained in PCC 17.16.125: Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM₁₀ Planning Area (Appendix 1: Certified Ordinance 2019-7).

8. Compliance/enforcement strategies, including how compliance will be determined in practice - 40 CFR App. V Section 2.2.h

PDEQ has the authority to conduct inspections to assure compliance with Pima County rules, any provision of the A.R.S., or Title 49, Chapter 3, Article 3. Compliance strategies include announced and unannounced inspections of facilities, requests for production of records, including review of records. Pima County Department of Environmental Quality may obtain a special inspection warrant pursuant to the provision of A.R.S. §49-488.

9. Special economic and technological justifications required by any applicable EPA policies, or an explanation of why such justifications are not necessary - 40 CFR App. V Section 2.2.i

No known deviations from EPA policy.

Appendix 1

Pima County Certified Ordinance 2019-7

**PCC Section 17.16.125 - Inactive
mineral tailings impoundment
and slag storage area
within the Ajo PM₁₀ Planning Area**

Certificate of Clerk

Board of Supervisors of Pima County, Arizona

State of Arizona

County of Pima ^{SS}

I, Julie Castañeda, do hereby certify that I am the duly appointed and qualified, Clerk of the Board of Supervisors of Pima County, Arizona.

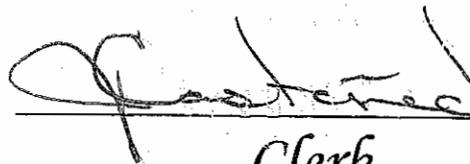
I further certify that the attached ordinance entitled

ORDINANCE NO. 2019 - 7

(See attached copy)

is a true and correct copy of an ordinance passed and adopted by the Board of Supervisors of Pima County, Arizona, at a meeting held on the 22nd day of January, 2019, at which a quorum was present, and that the original ordinance is officially of record in my possession.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the Board of Supervisors of Pima County, Arizona, this 29th day of January, 2019.


Clerk **COPY**

ORDINANCE NUMBER 2019-7

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA, RELATING TO AIR QUALITY; AMENDING THE PIMA COUNTY CODE TITLE 17, BY ADDING SECTION 17.16.125.

THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA, FINDS THAT:

1. The Pima County Board of Supervisors as the governing body for the Pima County Air Quality Control District adopts air quality ordinances under the statutory authority of Arizona Revised Statutes Title 49, Chapter 3, Article 3.
2. The Pima County Air Quality Control District operates within the Pima County Department of Environmental Quality.
3. The intention of this ordinance is to adopt and implement visible emissions and stabilization requirements in order to ensure continued particulate matter, specifically particulate matter at or less than 10 micrometers (PM₁₀) emissions reductions in the Ajo PM₁₀ Planning Area.

IT IS ORDAINED BY THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA, AS FOLLOWS:

Section 1: Title 17 is amended to add Section 17.16.125.

Chapter 17.16 - EMISSION LIMITING STANDARDS

Article III. - Emissions from Existing and New Nonpoint Sources

17.16.125 - Inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area.

- A. Applicability. This Section applies to the owner or operator of the inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area.
- B. Definitions. The following definitions apply for the purposes of this Section:
 1. "Affected area" means the Ajo PM₁₀ Planning Area.
 2. "Ajo PM₁₀ Planning Area" means the area designated in 40 C.F.R. §81.303, adopted as of June 30, 2017 with no future editions or amendments.
 3. "Chemical or organic soil stabilizer" means hygroscopic material, solution of water and chemical surfactant foam, non-toxic chemical stabilizer or any other chemical or organic

dust palliative that is not prohibited by the U. S. Environmental Protection Agency, the Arizona Department of Environmental Quality, the Pima County Department of Environmental Quality or any applicable law, rule, or regulation, as a treatment material for reducing PM₁₀ emissions.

4. "Coarse" with respect to copper smelter slag material means no less than 3/8 inches in diameter.
5. "Copper smelter slag" means the waste material consisting primarily of iron sulfides separated from copper matte during the smelting and refining of copper ore concentrates.
6. "Crushed rock" means crushed stone or angular rock of a size 2 inches or greater in diameter.
7. "Department" means the Pima County Department of Environmental Quality.
8. "Gravel" means a loose aggregation of rock fragments of low silt content (5% or less) and less than 2 inches in diameter.
9. "High wind event" means an hourly average wind speed of 25 miles per hour or more or an instantaneous wind gust of 40 miles per hour or more as measured in the affected area by a meteorological monitoring station.
10. "Inactive" with respect to the mineral tailings impoundment and slag storage area means that activities in support of ongoing mining operations or for any commercial purpose no longer occur.
11. "Meteorological monitoring station" means one of the following:
 - a. A Pima County Department of Environmental Quality meteorological monitoring station;
 - b. A station operated by the National Weather Service;
 - c. A Remote Automated Weather Station operated by the United States Forest Service, or United States Bureau of Land Management;
 - d. An Automated Weather Observing System or Automated Surface Observing System station, located at an airport, and either operated or certified by the Federal Aviation Administration; or
 - e. Any other meteorological equipment or wind instrument that is installed, calibrated, operated, and maintained by the owner or operator in accordance with the requirements for SLAMS/SPM (non-NCORE) instruments in *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements Version 2.0 (Final)*, publication number EPA-454/B-08-002, March 2008, and no future editions or amendments, and manufacturer's specifications, as applicable.
12. "Mineral tailings impoundment" means the earth-fill embankment dams used to store byproducts of prior mining operations that separated mineral ore from other unused material.
13. "Opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.
14. "Particulate matter" means any airborne finely divided solid or liquid material with an aerodynamic diameter smaller than one hundred micrometers.
15. "PM₁₀" means particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by a reference method contained within 40 C.F.R.

Part 50, Appendix J or by an equivalent method designated in accordance with 40 C.F.R. Part 53, both sections adopted as of June 30, 2017 with no future editions or amendments.

16. "Slag storage area" means the area used to store copper smelter slag.

17 "Vegetative cover" means rooted vegetation or unattached vegetative debris lying on the surface that is not susceptible to movement by wind.

C. Control Measures.

1. The owner or operator shall implement and maintain at least one of the following reasonably available control measures to reduce PM₁₀ emissions from the inactive mineral tailings impoundment to ensure compliance with subsection D.1 below:

a. Application of crushed rock or gravel;

b. Application of chemical or organic soil stabilizers;

c. Application of water;

d. Establishment of vegetative cover; or

e. Any other equivalent methods or techniques approved by the Department and EPA Region IX.

2. The owner or operator shall implement and maintain at least one of the following reasonably available control measures to reduce PM₁₀ emissions from the inactive slag storage area:

a. Application of a cap consisting of coarse copper smelter slag material; or

b. Any other equivalent methods or techniques approved by the Department and EPA Region IX.

3. To prevent trespass in the inactive mineral tailings impoundment and slag storage area, the owner or operator shall install and maintain the following:

a. No trespassing signs; and

b. Physical barriers such as fences, gates, posts, shrubs, trees, or other measures to effectively restrict access from the general public.

D. Opacity Standard.

1. The owner or operator shall not cause or allow visible emissions to exceed twenty percent opacity from the mineral tailings impoundment. Opacity shall be determined in accordance with subsection E.1 below.

2. The opacity standard in subsection D.1 above shall not apply during high wind events if the owner or operator has implemented and maintained reasonably available control measures required in subsections C.1 and C.3 above for the mineral tailings impoundment, as documented by subsection F.1.a below.

E. Monitoring.

1. To demonstrate compliance with subsections C.1 and D.1 above, the owner or operator shall conduct weekly visible emission observations of the mineral tailings impoundment.

a. All observations shall be conducted in accordance with 40 C.F.R. Part 60, Appendix A, Reference Method 9.

b. As an alternative to subsection E.1.a, the owner or operator may elect to conduct observation in accordance with ASTM D7520-16. If so, the owner or operator must

have standard operating procedures in place to ensure that equipment is operated and maintained in accordance with manufacturer's specifications per Section 8.1 of ASTM D7520-16.

2. To demonstrate compliance with subsection C.2 above, the owner or operator shall conduct monthly inspections of the slag storage area to assess the effectiveness of control measures. Inspection reports shall, at a minimum, include identification of inspector; inspection date and time; findings of inspection, and any corrective action or preventive measures to be taken.
3. To demonstrate compliance with subsection C.3 above, the owner or operator shall conduct monthly inspections of trespassing signs and physical constraints. Inspection reports shall, at a minimum, include identification of inspector; inspection date and time; findings of inspection, and any corrective action or preventive measures to be taken.

F. Recordkeeping.

1. The owner or operator shall maintain and make available to the Department or EPA Region IX the following records upon request:
 - a. Records of reasonably available control measures implemented and maintained as required by subsection C above;
 - b. Records of visible emission observations required by subsection E.1 above;
 - c. Records of inspections required by subsections E.2 and E.3 above;
 - d. Records of observer EPA Reference Method 9 or ASTM D7520-16 certifications;
 - e. Records of the owner or operator's installation, calibration, certification, operation, and maintenance of any meteorological equipment or wind instrument used for purposes of identifying high wind events; and
 - f. Records of meteorological monitoring station data used for purposes of identifying high wind events.
2. If the owner or operator elects to conduct weekly visual observations in accordance with subsection E.1.b, the following records shall be maintained:
 - a. ASTM D7520-16 certification documentation, data sheets, and all raw unaltered JPEGs used for opacity and certification determination, recorded in a form suitable and readily available for expeditious inspection and review.
 - b. Standard operating procedures used to ensure that equipment is operated and maintained in accordance with manufacturer's specifications per Section 8.1 of ASTM D7520-16.
3. All records required by this section shall be maintained by the owner or operator for a minimum of 5 years.

G. Notification.

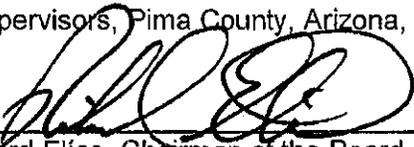
1. The owner or operator shall provide written notification to the Department at least 30 days prior to initiating weekly visual observations in accordance with subsection E.1. The notification shall identify proposed observation points/locations and provide justification for the selection of those points/locations.
2. The owner or operator shall provide written notification to the Department at least 30 days prior to using any meteorological monitoring station as described in subsection B.11.e.

H. Reporting.

1. The owner or operator shall report to the Department any visible emissions in excess of opacity limit established by subsection D.1. The report shall be in two parts as specified below:
 - a. Notification by telephone or facsimile within 24 hours of the time the owner or operator first learned of the occurrence of excess opacity that includes all available information from subsection H.2.
 - b. Detailed written notification by submission of an excess opacity report within 72 hours of the notification under subsection H.1.a.
2. The excess opacity report shall contain the following information:
 - a. The approximate location at the mineral tailing impoundment where the excess opacity occurred;
 - b. The level of excess opacity as measured in accordance with subsection F;
 - c. The time and duration or expected duration of the excess opacity;
 - d. The nature and cause or suspected cause of the excess opacity;
 - e. The steps that were or are being taken to limit the excess opacity; and
 - f. Any corrective action or preventative measures taken.
3. In the case of continuous or recurring excess opacity events, the notification requirements of this subsection shall be satisfied if the owner or operator provides the required notification after excess opacity events are first detected and includes in the notification an estimate of the time the excess opacity events will continue. Excess opacity occurring after the estimated time period or changes in the nature of the excess opacity as originally reported shall require additional notification pursuant to subsections H.1 and H.2.

Section 2. This Ordinance is effective 30 days after the date of adoption.

PASSED AND ADOPTED by the Board of Supervisors, Pima County, Arizona, this
22nd day of January, 2019



 Richard Elias, Chairman of the Board of Supervisors

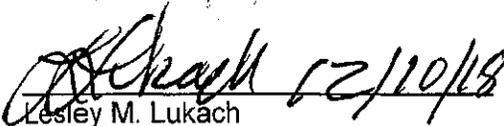
JAN 22 2019

ATTEST:



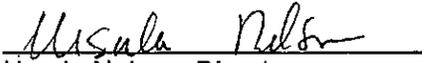
 Clerk of Board

APPROVED AS TO FORM:



 Lesley M. Lukach
 Deputy County Attorney

REVIEWED BY:



 Ursula Nelson, Director
 Department of Environmental Quality

ORDINANCE NUMBER 2019- 7

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA, RELATING TO AIR QUALITY; AMENDING THE PIMA COUNTY CODE TITLE 17, BY ADDING SECTION 17.16.125.

THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA, FINDS THAT:

1. The Pima County Board of Supervisors as the governing body for the Pima County Air Quality Control District adopts air quality ordinances under the statutory authority of Arizona Revised Statutes Title 49, Chapter 3, Article 3.
2. The Pima County Air Quality Control District operates within the Pima County Department of Environmental Quality.
3. The intention of this ordinance is to adopt and implement visible emissions and stabilization requirements in order to ensure continued particulate matter, specifically particulate matter at or less than 10 micrometers (PM₁₀) emissions reductions in the Ajo PM₁₀ Planning Area.

IT IS ORDAINED BY THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA, AS FOLLOWS:

Section 1: Title 17 is amended to add Section 17.16.125.

Chapter 17.16 - EMISSION LIMITING STANDARDS

...

Article III. - Emissions from Existing and New Nonpoint Sources

...

17.16.125 - Inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area.

- A. Applicability. This Section applies to the owner or operator of the inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area.
- B. Definitions. The following definitions apply for the purposes of this Section:
 1. "Affected area" means the Ajo PM₁₀ Planning Area.
 2. "Ajo PM₁₀ Planning Area" means the area designated in 40 C.F.R. §81.303, adopted as of June 30, 2017 with no future editions or amendments.
 3. "Chemical or organic soil stabilizer" means hygroscopic material, solution of water and chemical surfactant foam, non-toxic chemical stabilizer or any other chemical or organic

dust palliative that is not prohibited by the U. S. Environmental Protection Agency, the Arizona Department of Environmental Quality, the Pima County Department of Environmental Quality or any applicable law, rule, or regulation, as a treatment material for reducing PM₁₀ emissions.

4. "Coarse" with respect to copper smelter slag material means no less than 3/8 inches in diameter.
5. "Copper smelter slag" means the waste material consisting primarily of iron sulfides separated from copper matte during the smelting and refining of copper ore concentrates.
6. "Crushed rock" means crushed stone or angular rock of a size 2 inches or greater in diameter.
7. "Department" means the Pima County Department of Environmental Quality.
8. "Gravel" means a loose aggregation of rock fragments of low silt content (5% or less) and less than 2 inches in diameter.
9. "High wind event" means an hourly average wind speed of 25 miles per hour or more or an instantaneous wind gust of 40 miles per hour or more as measured in the affected area by a meteorological monitoring station.
10. "Inactive" with respect to the mineral tailings impoundment and slag storage area means that activities in support of ongoing mining operations or for any commercial purpose no longer occur.
11. "Meteorological monitoring station" means one of the following:
 - a. A Pima County Department of Environmental Quality meteorological monitoring station;
 - b. A station operated by the National Weather Service;
 - c. A Remote Automated Weather Station operated by the United States Forest Service, or United States Bureau of Land Management;
 - d. An Automated Weather Observing System or Automated Surface Observing System station, located at an airport, and either operated or certified by the Federal Aviation Administration; or
 - e. Any other meteorological equipment or wind instrument that is installed, calibrated, operated, and maintained by the owner or operator in accordance with the requirements for SLAMS/SPM (non-NCORE) instruments in *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements Version 2.0 (Final)*, publication number EPA-454/B-08-002, March 2008, and no future editions or amendments, and manufacturer's specifications, as applicable.
12. "Mineral tailings impoundment" means the earth-fill embankment dams used to store byproducts of prior mining operations that separated mineral ore from other unused material.
13. "Opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.
14. "Particulate matter" means any airborne finely divided solid or liquid material with an aerodynamic diameter smaller than one hundred micrometers.
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Part 50, Appendix J or by an equivalent method designated in accordance with 40 C.F.R. Part 53, both sections adopted as of June 30, 2017 with no future editions or amendments.

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C. Control Measures.

1. The owner or operator shall implement and maintain at least one of the following reasonably available control measures to reduce PM₁₀ emissions from the inactive mineral tailings impoundment to ensure compliance with subsection D.1 below:
 - a. Application of crushed rock or gravel;
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 - c. Application of water;
 - d. Establishment of vegetative cover; or
 - e. Any other equivalent methods or techniques approved by the Department and EPA Region IX.
2. The owner or operator shall implement and maintain at least one of the following reasonably available control measures to reduce PM₁₀ emissions from the inactive slag storage area:
 - a. Application of a cap consisting of coarse copper smelter slag material; or
 - b. Any other equivalent methods or techniques approved by the Department and EPA Region IX.
3. To prevent trespass in the inactive mineral tailings impoundment and slag storage area, the owner or operator shall install and maintain the following:
 - a. No trespassing signs; and
 - b. Physical barriers such as fences, gates, posts, shrubs, trees, or other measures to effectively restrict access from the general public.

D. Opacity Standard.

1. The owner or operator shall not cause or allow visible emissions to exceed twenty percent opacity from the mineral tailings impoundment. Opacity shall be determined in accordance with subsection E.1 below.
2. The opacity standard in subsection D.1 above shall not apply during high wind events if the owner or operator has implemented and maintained reasonably available control measures required in subsections C.1 and C.3 above for the mineral tailings impoundment, as documented by subsection F.1.a below.

E. Monitoring.

1. To demonstrate compliance with subsections C.1 and D.1 above, the owner or operator shall conduct weekly visible emission observations of the mineral tailings impoundment.
 - a. All observations shall be conducted in accordance with 40 C.F.R. Part 60, Appendix A, Reference Method 9.
 - b. As an alternative to subsection E.1.a, the owner or operator may elect to conduct observation in accordance with ASTM D7520-16. If so, the owner or operator must

have standard operating procedures in place to ensure that equipment is operated and maintained in accordance with manufacturer's specifications per Section 8.1 of ASTM D7520-16.

2. To demonstrate compliance with subsection C.2 above, the owner or operator shall conduct monthly inspections of the slag storage area to assess the effectiveness of control measures. Inspection reports shall, at a minimum, include identification of inspector; inspection date and time; findings of inspection, and any corrective action or preventive measures to be taken.
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 - c. Records of inspections required by subsections E.2 and E.3 above;
 - d. Records of observer EPA Reference Method 9 or ASTM D7520-16 certifications;
 - e. Records of the owner or operator's installation, calibration, certification, operation, and maintenance of any meteorological equipment or wind instrument used for purposes of identifying high wind events; and
 - f. Records of meteorological monitoring station data used for purposes of identifying high wind events.
2. If the owner or operator elects to conduct weekly visual observations in accordance with subsection E.1.b, the following records shall be maintained:
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 - b. Standard operating procedures used to ensure that equipment is operated and maintained in accordance with manufacturer's specifications per Section 8.1 of ASTM D7520-16.
3. All records required by this section shall be maintained by the owner or operator for a minimum of 5 years.

G. Notification.

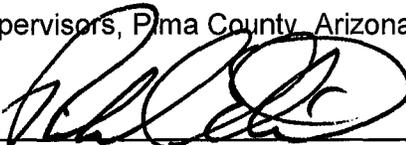
1. The owner or operator shall provide written notification to the Department at least 30 days prior to initiating weekly visual observations in accordance with subsection E.1. The notification shall identify proposed observation points/locations and provide justification for the selection of those points/locations.
2. The owner or operator shall provide written notification to the Department at least 30 days prior to using any meteorological monitoring station as described in subsection B.11.e.

H. Reporting.

1. The owner or operator shall report to the Department any visible emissions in excess of opacity limit established by subsection D.1. The report shall be in two parts as specified below:
 - a. Notification by telephone or facsimile within 24 hours of the time the owner or operator first learned of the occurrence of excess opacity that includes all available information from subsection H.2.
 - b. Detailed written notification by submission of an excess opacity report within 72 hours of the notification under subsection H.1.a.
2. The excess opacity report shall contain the following information:
 - a. The approximate location at the mineral tailing impoundment where the excess opacity occurred;
 - b. The level of excess opacity as measured in accordance with subsection F;
 - c. The time and duration or expected duration of the excess opacity;
 - d. The nature and cause or suspected cause of the excess opacity;
 - e. The steps that were or are being taken to limit the excess opacity; and
 - f. Any corrective action or preventative measures taken.
3. In the case of continuous or recurring excess opacity events, the notification requirements of this subsection shall be satisfied if the owner or operator provides the required notification after excess opacity events are first detected and includes in the notification an estimate of the time the excess opacity events will continue. Excess opacity occurring after the estimated time period or changes in the nature of the excess opacity as originally reported shall require additional notification pursuant to subsections H.1 and H.2.

Section 2. This Ordinance is effective 30 days after the date of adoption.

PASSED AND ADOPTED by the Board of Supervisors, Pima County, Arizona, this
22nd day of January, 2019

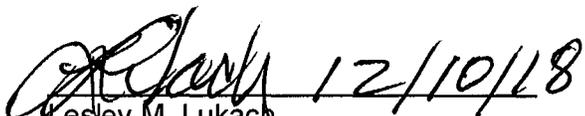

 Richard Elías, Chairman of the Board of Supervisors

JAN 22 2019

ATTEST:


 Clerk of Board

APPROVED AS TO FORM:


 Lesley M. Lukach
 Deputy County Attorney

REVIEWED BY:


 Ursula Nelson, Director
 Department of Environmental Quality

Appendix 2

Pima County Public Notice and Participation

**PCC Section 17.16.125 - Inactive
mineral tailings impoundment
and slag storage area
within the Ajo PM₁₀ Planning Area
and
State Implementation Plan Revision**



**PUBLIC NOTICE
AND
PUBLIC PARTICIPATION**

Rulemaking for Pima County Code
Section 17.16.125
and
Pima County SIP Revision

**INACTIVE MINERAL TAILINGS IMPOUNDMENT
AND SLAG STORAGE AREA WITHIN
THE AJO PM₁₀ PLANNING AREA**

April 19, 2019

Pima County Department of Environmental Quality
33 North Stone Avenue, Suite 700
Tucson, AZ 85701

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I. SUMMARY OF PIMA COUNTY CODE TITLE 17, SECTION 17.16.125

The Pima County Board of Supervisors (BOS), as the governing body for the Pima County Air Quality Control District, adopts ordinances. Adopted ordinances are codified in the Pima County Code (PCC). The Pima County Air Quality Control District operates within the Pima County Department of Environmental Quality (PDEQ). PDEQ periodically updates PCC through the BOS. On January 22, 2019 the Pima County BOS adopted Ordinance 2019-007 (Attachment A: BOS Agenda Item Report) adding Section 17.16.125 titled Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM₁₀ Planning Area to PCC Title 17, Chapter 17.16. The intention of this rulemaking was to meet State Implementation Plan (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented. Under this new section, owners or operators are subject to implement and maintain required Particulate Matter (PM₁₀) control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued Particulate Matter emissions reductions in the Ajo PM₁₀ Planning Area. The inactive tailings area must be controlled to 20 percent opacity for fugitive emissions on the property. For both the tailings and slag areas, owners or operators must also install and maintain signs and physical barriers to prevent trespass and re-disturbance on the property.

The costs of compliance for the Air Quality Permitting programs have already occurred, and were considered when the federal and state rule or law was proposed and adopted.

II. RULEMAKING PUBLIC NOTICES

PDEQ published notices of the Notice of Proposed Rulemaking (NPRM) on the Pima County Homepage and on the PDEQ website on October 26, 2018 and January 4, 2019 (Attachment B: Rulemaking Public Notice and Participation). Public Notices were published on October 26, 2018 and January 4, 2019 in two local newspapers (Arizona Daily Star and the Territorial Newspaper) (Attachment B). The Public Notices were also published in the Ajo Copper News on October 30, 2018 and January 1, 2019 (Attachment B). In addition, PDEQ e-mailed a notice of the proposed ordinance amendments to interested parties who had requested rulemaking notifications in the past (Attachment C: Stakeholder E-mail Notifications).

PDEQ published notices of the Notice of Final Rulemaking on the Pima County Homepage and on the PDEQ website on February 19, 2019 (Attachment B). In addition, PDEQ e-mailed a notice of the final rulemaking to interested parties who had requested rulemaking notifications in the past (Attachment C: Stakeholder E-mail Notifications).

III. NOTICE OF PROPOSED RULEMAKING

Pursuant to A.R.S. 49.471.04 PDEQ posted the NPRM (Attachment D: Notice of Proposed Rulemaking) on the Pima County Homepage. PDEQ also e-mailed the notice of the proposed ordinance amendments to interested parties who had requested rulemaking notifications in the past (Attachment C: Stakeholder E-mail Notifications). The publication of the NPRM coincided with the Public Notice and allowed for thirty days (30-days) for PDEQ to accept public comment on the proposed ordinance.

Public Notices for the NPRM and the Preamble for the NPRM inaccurately stated that “The inactive tailings and slag storage area must be controlled to 20 percent opacity for fugitive emissions on the property.” Due to the nature of the implemented control measures on the slag storage area the 20% opacity limitation does not apply to the slag storage area. The public noticed draft rule accurately has the opacity limitation in the section of the inactive tailings and not the slag storage area. The implemented control measures are required by the rule. The rule, as adopted, states that the 20% opacity limitation applies only to the inactive tailings. The preamble in the Notice of Final Rulemaking accurately states the opacity

limitation only applies to the inactive tailings. (Attachment F: Notice of Final Rulemaking).

IV. PUBLIC COMMENT ON THE RULE

During the thirty (30) day public comment period PDEQ received one (1) e-mail comment on the proposed rule from Mr. Shawn Dolan.

Written Comment. E-mail dated November 28, 2018

Mr. Dolan's e-mail included one (1) attachment: a document with specific edits to Pima County Code that Mr. Dolan proposed. Attachment E includes the e-mail comment and the document.

Sarah attached please find my comments on the subject proposed rule. Cited is the EPA Ferro Alloy NESHAP public law Jan 17, 2017 that defined ASTM D7520-16 as BACT for the measurement of Opacity of process fugitive emissions and excluded the use of Method 9 for this measurement. Further the comments point to the increase of record keeping being required should an Owner/Operator select to use the superior method ASTM D7520-16. Assuming Method 9 could be used for fugitive emissions, the Owner/Operator is not required to maintain the calibration and certification records of the smoke generator used to certify the Visible Emission Observer who performs the Method 9 VEO to determine Opacity. Therefore the Owner/Operator should not be required to maintain certification records of ASTM D7520-16 DCOT selected to measure opacity.

I agree that the Owner/Operator should maintain a copy of the Digital Camera Operator's certification who performed the observation (took the pictures) in an ASTM D7520 VEO, is much the same way that the Method 9 Observer's personal certification is maintained.

However extending the Owner/Operator requirement to the certification of the DCOT system is just excessive, e.g. No rules currently require the Owner/Operator to maintain the certification records of smoke generator's or the calibration records of the transmissometer's used in the smoke generators to determine the opacity of the test plumes. Which would be the equivalent of what is requested in F2a and the Configuration management records as required in ASTM D7520-16 8.1 would be like saying Method 9 users would have to maintain the maintenance records for the smoke generator, to include fire box flow checks, stack flow checks, blower calibration and NIST filter check etc.

However, Owner/Operators should maintain a Standard Operating Procedure explaining how ASTM D7520 is being implemented at the facility, e.g. who is responsible for the capture of imagery and the processing of the VEO, and the schedule of VEO's to be performed, as well as, the approval of completed VEO's, and their storage and retrieval methodology.

The electronic VEO records produced by DCOT's, already have thumbnails of the pictures and documentation of where in the picture the opacity determination is made, in comparison with hand written Method 9 VEO forms with no supporting information. Therefore, requiring the Owner/Operator to maintain more than the Finalized VEO report produced by the DCOT is excessive and burdensome.

PDEQ Response: The Pima County Department of Environmental Quality (PDEQ) has received your comments on the proposed amendments to Pima County Code Title 17: Adding Section 17.16.125. The intention of this rulemaking is to meet State Implementation Plan (SIP) requirements to provide permanent and enforceable control measures for inactive tailings in the Ajo PM₁₀ Planning Area.

PDEQ collaborated with the Arizona Department of Environmental Quality, the United States Environmental Protection Agency, and the affected owner/operator while drafting the current language of the proposed rule. Your comment requested that we only allow the use of ASTM D750-16 for the required visual observations. As current state regulations allow the use of Method 9 for visual observations, we must allow that alternative. The source may choose the ASTM method for points you made in your comment letter but PDEQ must allow the use of Method 9 if the source so chooses. PDEQ will maintain the current language of the proposed rule.

V. NOTICE OF FINAL RULEMAKING

Pursuant to A.R.S. 49.471.07 PDEQ posted a Notice of Final Rulemaking (Attachment F) on the Pima County Homepage (Attachment B: Rulemaking Public Notice and Participation). The Notice of Final Rulemaking was published on the PDEQ homepage, and the PDEQ rulemaking webpage (Attachment B). PDEQ also e-mailed the Notice of Final Rulemaking to interested parties who had requested rulemaking notifications in the past (Attachment C: Stakeholder E-mail Notifications).

VI. STATE IMPLEMENTATION PLAN REVISION PUBLIC NOTICES

Pursuant to Title 40 of the Code of Federal Regulations (CFR), Part 51, Appendix V: Criteria for Determining the Completeness of Plan Submissions §2.1(f) PDEQ published the notice of Proposed SIP Revision on the Pima County Homepage and on the PDEQ website on October 26, 2018 and January 4, 2019 (Attachment G: SIP Revision Public Notices). The Public Notice was published on October 26, 2018 and January 4, 2019 in two local newspapers (Arizona Daily Star and the Territorial Newspaper) (Attachment G). The Public Notice was also published in the Ajo Copper News on October 30, 2018 and January 1, 2019 (Attachment G). In addition, PDEQ e-mailed a notice of the proposed SIP revision to interested parties who had requested notifications in the past (Attachment C: Stakeholder E-mail Notifications).

VII. PUBLIC COMMENT ON STATE IMPLEMENTATION PLAN REVISION

During the thirty (30) day public comment period PDEQ did not receive comments on the proposed SIP Revision. PDEQ did not receive comments on the proposed SIP Revision during the SIP Public Hearing.

ATTACHMENT A

Board of Supervisors Agenda Item Report



BOARD OF SUPERVISORS AGENDA ITEM REPORT

Requested Board Meeting Date: January 22, 2019

Title: Amending Pima County Code Title 17 by adding Section 17.16.125 - Inactive mineral tailings impoundment and slag storage area within the Ajo PM10 Planning Area

Introduction/Background:

The Pima County Board of Supervisors (BOS) as the governing body for the Pima County Air Quality Control District adopts ordinances which are codified in the Pima County Code (PCC). The Pima County Air Quality Control District operates within the Pima County Department of Environmental Quality (PDEQ). PDEQ periodically proposes updates to PCC through the BOS. The intention of this rulemaking is to meet State Implementation Plan (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented.

Discussion:

Under this new section, owners or operators of inactive mineral tailings and slag storage areas are subject to implement and maintain required Particulate Matter (PM₁₀) control measures to meet visible emissions and stabilization requirements, in order to ensure continued Particulate Matter emissions reductions in the Ajo PM₁₀ Planning Area.

Conclusion:

PDEQ is proposing this rulemaking to meet State Implementation Plan (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented so the Ajo PM₁₀ Planning Area may be redesignated to attainment.

Recommendation:

Staff recommends the Board of Supervisors adopt the proposed addition to PCC Title 17.

Fiscal Impact:

This revision should not have an economic impact on businesses in Pima County, and should not impose additional costs on the regulated community, small businesses, political subdivisions, and members of the public beyond that already incurred by reason of federal or state rule or law. The costs of compliance for the Air Quality Permitting programs have already occurred, and were considered when the federal and state rule or law was proposed and adopted.

Board of Supervisor District:

- 1 2 3 4 5 All

Department: Environmental Quality Telephone: 724-7400

Contact: Sarah Reitmeyer, Regulatory Program Manager Telephone: 724-7437

Department Director Signature/Date: *Msula Nelc* 12.17.2018

Deputy County Administrator Signature/Date: *[Signature]* 12/18/18

County Administrator Signature/Date: *C. DeMetbey* 12/18/18

COPY

ATTACHMENT B

Rulemaking Public Notice Documents

Pima County Homepage
Notice of Proposed Rulemaking
1st Public Notice
October 26, 2018

The screenshot shows the Pima County website homepage. At the top, there is a navigation bar with links for Library, Calendar, Employment, and Contact Us, along with social media icons for Twitter and Facebook. Below this is the Pima County logo and a search bar labeled "Custom Search". A secondary navigation bar lists various departments: Recreation, Health, Development, Business, Community, Environment, and Government. The main content area features a large banner image of a cityscape with a "Public Service" message: "It's monsoon time! Drive safe and when in doubt, turn around. For weather related road conditions, call the Sheriff's Department hotline at (520) 547-7510." Below the banner are five tabs: TOP NEWS, ENGAGE, LIVE, WORK, and PLAY. The "TOP NEWS" section is active and contains three columns of news. The first column, "News Releases", lists several items, with "DEQ proposed rulemaking changes" highlighted in yellow. The second column, "Featured News", includes two articles with images: "Elections set to mail sample ballots for Nov. 6 election" and "McKenzie Ranch Trails Park dedication set for Nov. 3". The third column, "Quick Links", lists various county services and documents. At the bottom, there is a footer with the Pima County seal, copyright information, and links for Accessibility, HIPAA/Privacy Statement, Security, Sitemap, Terms of Use, and Website Feedback.

<http://webcms.pima.gov/>

Pima County Department of
Environmental Quality Homepage
Notice of Proposed Rulemaking
1st Public Notice
October 26, 2018

Library | Calendar | Employment | Contact Us

PIMA COUNTY

Custom Search

Recreation | Health | Development | Business | Community | Environment | Government

Pima County » Government » Environmental Quality

Environmental Quality

Pima County Department of Environmental Quality (PDEQ), formed in 1989, serves Pima County by protecting public health and the environment. PDEQ operates programs to monitor air and water quality, hazardous waste, solid waste, and assist in waste minimization and pollution prevention. PDEQ also provides public outreach, education, and citizens' assistance; processes environmental permits; and responds to public complaints and inquiries with investigations and enforcement.

Our Mission

Preserve and protect the environment of Pima County for the long-term benefit of residents' health, welfare, safety, and quality of life. Identify and respond to environmental issues by providing public services including monitoring, enforcement, information, education, and solid waste management.

Featured News

- October 26, 2018 - DEQ proposes revisions to State implementation plan
- October 26, 2018 - DEQ proposed rulemaking changes
- October 24, 2018 - PDEQ suggests idling less on Halloween
- October 11, 2018 - Air Quality Health Watch for Green Valley
- August 08, 2018 - Pima DEQ issues revised Air Quality Permit for TEP

[View more news articles](#)

Air | Water | Waste & Recycling | Information & Outreach | Complaints | Kids Corner | Fees

Air Program

The [Air Program](#) is comprised of multiple sections which address different issues regarding air quality.

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- Fees

http://webcms.pima.gov/government/environmental_quality/

Pima County Department of
Environmental Quality Newsroom Article
Notice of Proposed Rulemaking
1st Public Notice
October 26, 2018

Library | Calendar | Employment | Contact Us

PIMA COUNTY

Recreation | Health | Development | Business | Community | Environment | Government

Pima County » Newsroom » Environmental Quality Newsroom » Homepage Articles » DEQ proposed rulemaking changes

DEQ proposed rulemaking changes

Oct 26, 2018 | [Read More News](#)

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NOTICE OF PROPOSED RULEMAKING
PROPOSING AMENDMENTS
TO PIMA COUNTY CODE TITLE 17
CHAPTER 17.16 ADDING SECTION 17.16.125

The Pima County Board of Supervisors (BOS) as the governing body for the Pima County Air Quality Control District adopts ordinances which are codified in the Pima County Code (PCC). The Pima County Air Quality Control District operates within the [Pima County Department of Environmental Quality](#) (PDEQ). PDEQ periodically proposes updates to PCC through the BOS. This Notice of Proposed Rulemaking proposes the addition of a new section to PCC Title 17, Chapter 17.16, Section 17.16.125- Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM10 Planning Area. The intention of this rulemaking is to meet State Implementation Plan (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented. Under this new section, owners or operators are subject to implement and maintain required Particulate Matter (PM10) control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued Particulate Matter emissions reductions in the Ajo PM10 Planning Area. The inactive tailings and slag storage area must be controlled to 20 percent opacity for fugitive emissions on the property. For both the tailings and slag areas, owners or operators must also install and maintain signs and physical barriers to prevent trespass and re-disturbance on the property. The rule text and other related information is available at the PDEQ office, and on the PDEQ website (noted below), or you may request a copy by contacting our department.

A public hearing before the Pima County Board of Supervisors will be held on Tuesday, January 22, 2019, at, or after, 9 a.m. in the Board Hearing Room, located at 130 W. Congress, 1st floor, Tucson, Arizona.

Comments pertaining to the Notice of Proposed Rulemaking may be submitted at the above noticed public hearing, in writing to PDEQ (Attn: Sarah Reitmeyer, 33 N. Stone Ave Suite 700, Tucson, AZ 85701), or via email to [Sarah Reitmeyer](#). Written comments on the Notice of Proposed Rulemaking will be accepted by PDEQ until 5 p.m. on November 28, 2018.

The Notice of Proposed Rulemaking is available for review at the PDEQ office, and on the PDEQ Rules and Regulations [Website](#) under Draft, Proposed, & Final Rules. If requested, PDEQ can email a pdf version of the Notice of Proposed Rulemaking to anyone requesting this service. For additional information, please call Sarah Reitmeyer at (520) 724-7437.

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<http://webcms.pima.gov/cms/One.aspx?portalId=169&pageId=455850>

Pima County Department of
 Environmental Quality Rulemaking Website
 Notice of Proposed Rulemaking
 1st Public Notice
 October 26, 2018

The screenshot shows the Pima County website's 'Draft, Proposed, & Final Rules' page. The page title is 'Draft, Proposed, & Final Rules'. The main content area contains the following text:

The Arizona Revised Statutes 49-112 and 49-471 et seq. authorizes the county to adopt regulations and establishes a rulemaking process by which the county must follow. In addition, a variety of state laws give citizens the right to comment on regulations before the county can put them into effect. Pima County Department of Environmental Quality is responsible for creating and amending existing rules within Pima County Code Title 7- Environmental Quality, Title 13 - Public Service, and Title 17 - Air Quality, and creating and amending existing Pima County Ordinances relating to Air, Water, and Waste.

PDEQ follows a process for creating and amending Pima County Code and Pima County Ordinances. An [Introduction to the Rulemaking Process](#) provides an overview of the process and frequently asked questions regarding rulemaking. PDEQ also follows a process for revising the Pima County portion of the Arizona [State Implementation Plan \(SIP\)](#). Each rulemaking, or revision of the Pima County portion of the SIP will have a 30-day Public Comment period. Public Comments can be submitted in writing via letter, [e-mail to Sarah Reitmeyer](#), or through the PDEQ [online Public Comment Form](#). We encourage you to [participate in the rulemaking process](#).

Navigation tabs for 'Air', 'Water', and 'Waste' are visible. The 'Air' tab is selected, showing the following content:

Air
 Title 17 - Inactive mineral tailings impoundment and slag storage area within the Ajo PM10 Planning Area

Summary: This Notice of Proposed Rulemaking proposes the addition of a new section to PCC Title 17, Chapter 17.16, Section 17.16.125- Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM10 Planning Area. The intention of this rulemaking is to meet State Implementation Plan (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented. Under this new section, owners or operators are subject to implement and maintain required Particulate Matter (PM10) control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued Particulate Matter emissions reductions in the Ajo PM10 Planning Area.

Documents	Deadline for Public Comment	Public Hearing Date
Notice of Proposed Rulemaking	November 28, 2018	January 22, 2019
Public Notice-10-26-2018		
Draft Ordinance adding PCC 17.16.125		

On the right side of the page, there is a sidebar with the following items:

- Department of Environmental Quality (33 N. Stone Ave., Suite 700 Tucson, AZ 85701)
- Phone: (520) 724-7400
- Fax: (520) 838-7432
- Department Home
- Department News
- Hours
- Department Directory
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- Rules & Regulations
- Reports & Publications
- Forms
- Permits
- Fees

<http://webcms.pima.gov/cms/one.aspx?portalId=169&pageId=64989>

Pima County Homepage News Release Notice of Proposed Rulemaking 2nd Public Notice January 4, 2019

The screenshot shows the Pima County website homepage. At the top, there is a navigation bar with links for Library, Calendar, Employment, and Contact Us, along with social media icons for Twitter and Facebook. Below this is a search bar labeled "Custom Search" and a main menu with categories: Recreation, Health, Development, Business, Community, Environment, and Government. The main banner features a photograph of two military aircraft, one with the number 25 and another with 517. A text box on the right of the banner reads: "Explore Pima County Pima County partners with major tourist attractions, including the Pima Air and Space Museum, which was recently named one of the 20 best aviation museums in the world." Below the banner is a navigation bar with buttons for TOP NEWS, ENGAGE, LIVE, WORK, and PLAY. The main content area is divided into three columns: News Releases, Featured News, and Quick Links. The "News Releases" column has a yellow highlight on the first item: "Notice of Proposed Rulemaking". Other items in this column include "Ways to feel good about your commute in 2019", "County opens Agua Caliente Park for limited fishing", "PVHS, Las Artes accepting students for January 2019", and "Supervisors approve resolution opposing proposed Clean Water Rule changes". The "Featured News" column has two items: "Freezing temps dangerous for animals not used to the cold" with a photo of a dog, and "Pima County, TUSD sue state for unpaid state aid" with a photo of books. The "Quick Links" column lists various services and documents. At the bottom, there is a footer with the Pima County logo, copyright information, and links for Accessibility, HIPAA/Privacy Statement, Security, Sitemap, Terms of Use, and Website Feedback.

<http://webcms.pima.gov/>

Pima County Department of Environmental Quality Homepage Notice of Proposed Rulemaking 2nd Public Notice January 4, 2019

Library | Calendar | Employment | Contact Us

PIMA COUNTY

Custom Search

Recreation | Health | Development | Business | Community | Environment | Government

Pima County > Government > Environmental Quality

Environmental Quality

Pima County Department of Environmental Quality (PDEQ), formed in 1989, serves Pima County by protecting public health and the environment. PDEQ operates programs to monitor air and water quality, hazardous waste, solid waste, and assist in waste minimization and pollution prevention. PDEQ also provides public outreach, education, and citizens' assistance; processes environmental permits; and responds to public complaints and inquiries with investigations and enforcement.

Our Mission

Preserve and protect the environment of Pima County for the long-term benefit of residents' health, welfare, safety, and quality of life. Identify and respond to environmental issues by providing public services including monitoring, enforcement, information, education, and solid waste management.

Featured News

- [January 04, 2019 - Notice of Proposed Rulemaking](#)
- [December 27, 2018 - Ways to feel good about your commute in 2019](#)
- [December 04, 2018 - Final Permit Decision for Tucson Electric Power Irvington Generating Station, PSD Permit No. 1052, PSD Appeal No. 18-02](#)
- [November 29, 2018 - DEQ encourages you to check your car's tire pressure](#)
- [November 28, 2018 - Smoke from fireplaces can cause breathing issues for some](#)

[View more news articles](#)

Air | Water | Waste & Recycling | Information & Outreach | Complaints | Kids Corner | Fees

Air Program

The [Air Program](#) is comprised of multiple sections which address different issues regarding air quality.

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Pima County Department of
Environmental Quality Newsroom Article
Notice of Proposed Rulemaking
2nd Public Notice
January 4, 2019

The screenshot shows the Pima County Newsroom website. At the top, there is a navigation bar with links for Library, Calendar, Employment, and Contact Us, along with social media icons for Twitter and Facebook. Below this is a search bar labeled "Custom Search" and a "PIMA COUNTY" logo featuring a dome. A secondary navigation bar lists categories: Recreation, Health, Development, Business, Community, Environment, and Government. The main content area displays the breadcrumb trail: Pima County » Newsroom » Environmental Quality Newsroom » Homepage Articles » Notice of Proposed Rulemaking. The article title is "Notice of Proposed Rulemaking" with a date of "Jan 04, 2019" and a "Share" button. The text of the notice reads: "SECOND NOTICE NOTICE OF PROPOSED RULEMAKING PROPOSING AMENDMENTS TO PIMA COUNTY CODE TITLE 17 CHAPTER 17.16 ADDING SECTION 17.16.125". The notice explains that the Pima County Board of Supervisors (BOS) is adopting ordinances for the Pima County Air Quality Control District (PCC) to meet State Implementation Plan (SIP) requirements. It details the addition of a new section to PCC Title 17, Chapter 17.16, Section 17.16.125, concerning Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM10 Planning Area. The notice states that the intention is to meet SIP requirements for permanence and enforceability of control measures. It also mentions that a public hearing will be held on Tuesday, January 22, 2019, at 9 a.m. in the Board Hearing Room, located at 130 W. Congress, 1st floor, Tucson, Arizona. Comments can be submitted at this hearing. For more information, contact Sarah Reitmeyer, Regulatory Program Manager, at (520) 724-7437 or visit PDEQ's website at http://webcms.pima.gov/government/environmental_quality/. The footer contains copyright information for 2018, Pima County Arizona, and links for Accessibility, HIPAA/Privacy Statement, Security, Sitemap, Terms of Use, and Website Feedback.

<http://webcms.pima.gov/cms/One.aspx?portalId=169&pageId=465174>

Pima County Department of
Environmental Quality Rulemaking Website
Notice of Proposed Rulemaking
2nd Public Notice
January 4, 2019

The screenshot shows the Pima County website interface. At the top, there is a navigation bar with links for Library, Calendar, Employment, and Contact Us. Below this is a search bar and a main menu with categories like Recreation, Health, Development, Business, Community, Environment, and Government. The main content area displays the title "Draft, Proposed, & Final Rules" and provides information about the rulemaking process. A sidebar on the right contains various departmental links and contact information.

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Draft, Proposed, & Final Rules

The Arizona Revised Statutes 49-112 and 49-471 et seq. authorizes the county to adopt regulations and establishes a rulemaking process by which the county must follow. In addition, a variety of state laws give citizens the right to comment on regulations before the county can put them into effect. Pima County Department of Environmental Quality is responsible for creating and amending existing rules within Pima County Code Title 7- Environmental Quality, Title 13 - Public Service, and Title 17 - Air Quality, and creating and amending existing Pima County Ordinances relating to Air, Water, and Waste.

PDEQ follows a process for creating and amending Pima County Code and Pima County Ordinances. An [Introduction to the Rulemaking Process](#) provides an overview of the process and frequently asked questions regarding rulemaking. PDEQ also follows a process for revising the Pima County portion of the Arizona [State Implementation Plan \(SIP\)](#). Each rulemaking, or revision of the Pima County portion of the SIP will have a 30-day Public Comment period. Public Comments can be submitted in writing via letter, [e-mail to Sarah Reitmeyer](#), or through the PDEQ [online Public Comment Form](#). We encourage you to [participate in the rulemaking process](#).

Air | Water | Waste

Air

Title 17 - Inactive mineral tailings impoundment and slag storage area within the Ajo PM10 Planning Area

Summary: This Notice of Proposed Rulemaking proposes the addition of a new section to PCC Title 17, Chapter 17.16, Section 17.16.125- Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM10 Planning Area. The intention of this rulemaking is to meet [State Implementation Plan \(SIP\)](#) requirements to provide permanence and enforceability for control measures that have already been implemented. Under this new section, owners or operators are subject to implement and maintain required Particulate Matter (PM10) control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued Particulate Matter emissions reductions in the Ajo PM10 Planning Area.

Documents	Deadline for Public Comment	Public Hearing Date
Notice of Proposed Rulemaking	Comment Period Closed	January 22, 2019
1st Public Notice-10-26-2018		
Draft Ordinance adding PCC 17.16.125		
2nd Public Notice-01-04-2019		

Title 17 - Reorganization

<http://webcms.pima.gov/cms/one.aspx?portalId=169&pageId=64989>

Pima County Homepage Notice of Final Rulemaking Public Notice February 19, 2019

The screenshot shows the Pima County website homepage. At the top, there is a navigation bar with links for Recreation, Health, Development, Business, Community, Environment, and Government. Below this is a large banner image of a gem show with a text overlay titled "What's Happening?" that reads: "Find unique wares from around the world at the A.S. Gem Show held at Kino Sports Complex Feb. 2 - 17. Free admission, free parking, plenty of food vendors and more." Below the banner are five tabs: TOP NEWS, ENGAGE, LIVE, WORK, and PLAY. The main content area is divided into three columns: News Releases, Featured News, and Quick Links. The News Releases column lists several items, with the first one, "Notice of final rulemaking - Ajo", highlighted in yellow. The Featured News column has two items: "PACC celebrating PetSmart National Adoption Weekend" and "Country Markets at Canoa Ranch extended through May 30". The Quick Links column lists various services like Board of Supervisors, Board Agendas, County Administrator, etc. At the bottom, there is a footer with the Pima County logo, copyright information, and links for Accessibility, Security, Terms of Use, HIPAA/Privacy Statement, and Sitemap.

webcms.pima.gov

Recreation | Health | Development | Business | Community | Environment | Government

What's Happening?
Find unique wares from around the world at the A.S. Gem Show held at Kino Sports Complex Feb. 2 - 17. Free admission, free parking, plenty of food vendors and more.

TOP NEWS | ENGAGE | LIVE | WORK | PLAY

News Releases

- Notice of final rulemaking - Ajo
- Youth get up-close look at justice careers at Feb. 13 expo
- Pantano Wash Flood Control improvements win regional award
- Air quality crucial to healthy hearts
- Community Mental Health and Addiction Program is breaking barriers caused by stigma

[Read More News](#)

Featured News

 PACC celebrating PetSmart National Adoption Weekend
PACC is waiving adoption fees on any pets four months or older as part of a special adoption event F

 Country Markets at Canoa Ranch extended through May 30
Artisans, vendors and more will be on hand each Thursday.

[Read More News](#)

Quick Links

- Board of Supervisors
- Board Agendas
- County Administrator
- Transparency
- Proposed Taxes and Fees
- Public Records Request
- County Budget
- Property Taxes
- Volunteer
- Subscribe to Newsletter
- Apply for Justice of the Peace, Precinct 9

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Pima County Department of Environmental Quality Homepage Notice of Final Rulemaking February 19, 2019

Pima County » Government » Environmental Quality

Environmental Quality

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Featured News

- February 19, 2019 - Notice of final rulemaking - Ajo
- February 13, 2019 - Air quality crucial to healthy hearts
- January 04, 2019 - Notice of Proposed Rulemaking
- January 04, 2019 - Proposed revision to Arizona State Implementation Plan
- December 27, 2018 - Ways to feel good about your commute in 2019

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Pima County Department of Environmental Quality Newsroom Article Notice of Final Rulemaking February 19, 2019

The screenshot shows the Pima County website's newsroom article page. At the top, there is a navigation bar with links for Library, Calendar, Employment, and Contact Us, along with social media icons for Twitter and Facebook. Below this is a search bar labeled "Custom Search" and a "PIMA COUNTY" logo featuring a dome and mountains. A secondary navigation bar lists categories: Recreation, Health, Development, Business, Community, Environment, and Government. The breadcrumb trail reads: Pima County » Newsroom » Environmental Quality Newsroom » Homepage Articles » Notice of Final Rulemaking-Ajo Inactive Mineral Tailings Impoundment & Slag Storage Area. The article title is "Notice of final rulemaking - Ajo" with a date of Feb 19, 2019 and a "Read More News" link. A "Share" button is present. The main text is titled "NOTICE OF FINAL RULEMAKING AMENDMENTS TO PIMA COUNTY CODE TITLE 17 CHAPTER 17.16 ADDING SECTION 17.16.125". The text describes the adoption of ordinances by the Pima County Board of Supervisors (BOS) for the Ajo PM10 Planning Area, aimed at meeting State Implementation Plan (SIP) requirements. It details control measures for Particulate Matter (PM10) and fugitive emissions, and notes the rule's effective date of February 21, 2019. A footer section includes the Pima County seal, copyright information for 2019, and links for Accessibility, HIPAA/Privacy Statement, Security, Sitemap, Terms of Use, and Website Feedback.

Pima County » Newsroom » Environmental Quality Newsroom » Homepage Articles » Notice of Final Rulemaking-Ajo Inactive Mineral Tailings Impoundment & Slag Storage Area

Notice of final rulemaking - Ajo

Feb 19, 2019 | [Read More News](#)

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NOTICE OF FINAL RULEMAKING
AMENDMENTS
TO PIMA COUNTY CODE TITLE 17
CHAPTER 17.16 ADDING SECTION 17.16.125

The Pima County Board of Supervisors (BOS) as the governing body for the Pima County Air Quality Control District adopts ordinances which are codified in the Pima County Code (PCC). The Pima County Air Quality Control District operates within the [Pima County Department of Environmental Quality](#) (PDEQ). PDEQ periodically proposes updates to PCC through the BOS. This [Notice of Final Rulemaking](#) is for the addition of a new section to PCC Title 17, Chapter 17.16, Section 17.16.125- Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM10 Planning Area. The intention of this rulemaking was to meet [State Implementation Plan](#) (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented. Under this new section, owners or operators are subject to implement and maintain required Particulate Matter (PM10) control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued Particulate Matter emissions reductions in the Ajo PM10 Planning Area. The inactive tailings area must be controlled to 20 percent opacity for fugitive emissions on the property. For both the tailings and slag areas, owners or operators must also install and maintain signs and physical barriers to prevent trespass and re-disturbance on the property. This rule was adopted by the Pima County Board of Supervisors at the Tuesday, January 22, 2019 BOS Hearing. The effective date of this rule is February 21, 2019.

Information regarding this Rulemaking may be viewed under the Air tab on the [PDEQ Draft, Proposed, & Final Rules](#) website. Copies are also available at our office, or may be requested via [e-mail to Sarah Reitmeyer](#).

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Pima County Department of Environmental Quality Rulemaking Website Notice of Final Rulemaking February 19, 2019

Recreation | Health | Development | Business | Community | Environment | Government

Pima County » Government » Environmental Quality » Rules and Regulations » Draft, Proposed, & Final Rules

Draft, Proposed, & Final Rules

The Arizona Revised Statutes 49-112 and 49-471 et seq. authorizes the county to adopt regulations and establishes a rulemaking process by which the county must follow. In addition, a variety of state laws give citizens the right to comment on regulations before the county can put them into effect. Pima County Department of Environmental Quality is responsible for creating and amending existing rules within Pima County Code Title 7- Environmental Quality, Title 13 - Public Service, and Title 17 - Air Quality, and creating and amending existing Pima County Ordinances relating to Air, Water, and Waste.

PDEQ follows a process for creating and amending Pima County Code and Pima County Ordinances. An [Introduction to the Rulemaking Process](#) provides an overview of the process and frequently asked questions regarding rulemaking. PDEQ also follows a process for revising the Pima County portion of the Arizona [State Implementation Plan \(SIP\)](#). Each rulemaking, or revision of the Pima County portion of the SIP will have a 30-day Public Comment period. Public Comments can be submitted in writing via letter, [e-mail to Sarah Reitmeyer](#), or through the PDEQ [online Public Comment Form](#). We encourage you to [participate in the rulemaking process](#).

Air
Water
Waste

Air

Title 17 - Inactive mineral tailings impoundment and slag storage area within the Ajo PM10 Planning Area

Summary: This Notice of Proposed Rulemaking proposes the addition of a new section to PCC Title 17, Chapter 17.16, Section 17.16.125- Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM10 Planning Area. The intention of this rulemaking is to meet [State Implementation Plan \(SIP\)](#) requirements to provide permanence and enforceability for control measures that have already been implemented. Under this new section, owners or operators are subject to implement and maintain required Particulate Matter (PM10) control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued Particulate Matter emissions reductions in the Ajo PM10 Planning Area.

Documents	Deadline for Public Comment	Public Hearing Date
Notice of Final Rulemaking	Comment Period Closed	January 22, 2019
BOS Agenda Submission - Ordinance & Public Notice Documents		
Notice of Proposed Rulemaking		
1st Public Notice-10-26-2018		
Draft Ordinance adding PCC 17.16.125		
2nd Public Notice-01-04-2019		

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Department of Environmental Quality
 33 N. Stone Ave., Suite 700
 Tucson, AZ 85701

Phone: (520) 724-7400
 Fax: (520) 838-7432

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Newspaper Public Notices

Arizona Daily Star
Rulemaking Public Notice
1st Public Notice
October 26, 2018

ARIZONA DAILY STAR

Tucson, Arizona

STATE OF ARIZONA)
COUNTY OF PIMA)

Debbie Freedle, being first duly sworn deposes and says: that she is the Advertising Representative of **TNI PARTNERS**, a General Partnership organized and existing under the laws of the State of Arizona, and that it prints and publishes the Arizona Daily Star, a daily newspaper printed and published in the City of Tucson, Pima County, State of Arizona, and having a general circulation in said City, County, State and elsewhere, and that the attached ad was printed and

Legal Notice

published correctly in the entire issue of the said Arizona Daily Star on each of the following dates, to-wit:

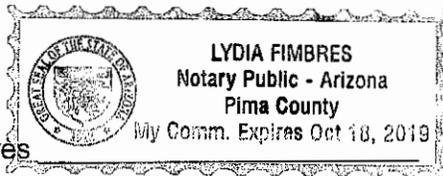
October 26, 2018

Debbie Freedle

Subscribed and sworn to before me this 30th day of October 2018

Lydia Fimbres

Notary Public



My commission expires

AD NO. 8836480

NOTICE OF PROPOSED RULEMAKING PROPOSING AMENDMENTS TO PIMA COUNTY CODE TITLE 17 CHAPTER 17.16 ADDING SECTION 17.16.125

The Pima County Board of Supervisors (BOS) as the governing body for the Pima County Air Quality Control District adopts ordinances which are codified in the Pima County Code (PCC). The Pima County Air Quality Control District operates within the Pima County Department of Environmental Quality (PDEQ). PDEQ periodically proposes updates to PCC through the BOS. This Notice of Proposed Rulemaking proposes the addition of a new section to PCC Title 17, Chapter 17.16, Section 17.16.125 - Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM10 Planning Area.

The intention of this rulemaking is to meet State Implementation Plan (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented. Under this new section, owners or operators are subject to implement and maintain required Particulate Matter (PM10) control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued Particulate Matter emissions reductions in the Ajo PM10 Planning Area. The inactive tallings and slag storage area must be controlled to 20 percent opacity for fugitive emissions on the property. For both the tallings and slag areas, owners or operators must also install and maintain signs and physical barriers to prevent trespass and re?disturbance on the property. The rule text and other related information is available at the PDEQ office, and on the PDEQ website (noted below), or you may request a copy by contacting our department.

A public hearing before the Pima County Board of Supervisors will be held on Tuesday, January 22, 2019, at or after 9:00 a.m. in the Board Hearing Room, located at 130 W. Congress, 1st floor, Tucson, Arizona.

Comments pertaining to the Notice of Proposed Rulemaking may be submitted at the above noticed public hearing, in writing to PDEQ (Attn: Sarah Reitmeyer, 33 N Stone Ave Suite 700, Tucson, AZ 85701), or via e-mail to sarah.reitmeyer@pima.gov. Written comments on the Notice of Proposed Rulemaking will be accepted by PDEQ until 5:00 p.m. on November 28, 2018.

For additional information please contact Sarah Reitmeyer, Regulatory Program Manager, at (520) 724-7437 or visit PDEQ's website at http://webcms.pima.gov/government/environmental_quality/

Publish October 26, 2018
Arizona Daily Star

Daily Territorial
Rulemaking Public Notice
1st Public Notice
October 26, 2018

DAILY TERRITORIAL
SUITE 302
333 E W WILCOX DR
SIERRA VISTA AZ 85635
(520)294-1200

ORDER CONFIRMATION (CONTINUED)

Salesperson: Not Applicable

Printed at 10/24/18 12:27 by lkope-wc

Acct #: 424173

Ad #: 96669

Status: New WHOLD WH

NOTICE OF HEARING
NOTICE OF PROPOSED RULEMAKING
PROPOSING AMENDMENTS
TO PIMA COUNTY CODE TITLE 17
CHAPTER 17.16 ADDING Section 17.16.125
The Pima County Board of Supervisors (BOS)
as the governing body for the Pima County Air
Quality Control District adopts ordinances
which are codified in the Pima County Code
(PCC). The Pima County Air Quality Control
District operates within the Pima County De-
partment of Environmental Quality (PDEQ).
PDEQ periodically proposes updates to PCC
through the BOS. This Notice of Proposed
Rulemaking proposes the addition of a new sec-
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(PM10) control measures on applicable sources
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Comments pertaining to the Notice of Proposed
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Sarah Reitmeyer, 33 N Stone Ave Suite 700,
Tucson, AZ 85701), or via e-mail to sarah.reit-
meyer@pima.gov. Written comments on the
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2018.

For additional information please contact Sarah
Reitmeyer, Regulatory Program Manager, at
(520) 724-7437 or visit PDEQ's website at
http://webcms.pima.gov/government/environmental_quality/

PUBLISH: The Daily Territorial
OCTOBER 26, 2018

Ajo Copper News
Rulemaking Public Notice
1st Public Notice
October 30, 2018

Ajo Copper News

Hollister David, Publisher
Gabrielle David, Editor
Rayetta Legge, Office Manager

P. O. Box 39 • Ajo, Arizona 85321
Phone (520) 387-7688
FAX (520) 387-7505

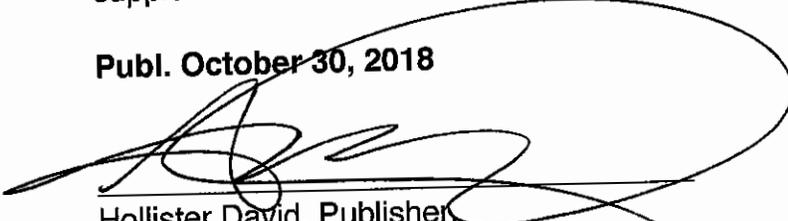
STATE OF ARIZONA)
) ss.
COUNTY OF PIMA)

Hollister David deposes and says that he is the publisher of the *Ajo Copper News*, a weekly newspaper of general circulation and established character, published weekly at Ajo, Pima County, Arizona, and that

NOTICE OF PROPOSED RULEMAKING PROPOSING AMENDMENTS TO PIMA COUNTY CODE TITLE 17 CHAPTER 17. 16 ADDING SECTION 17.16.125

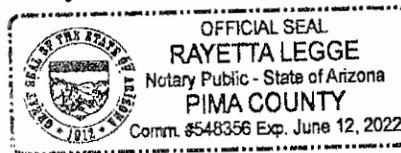
a correct copy of which is attached to this affidavit, was published in the said *Ajo Copper News* every week in the newspaper proper and not in a supplement for

Publ. October 30, 2018


Hollister David, Publisher,
Ajo Copper News

Sworn to and subscribed before me, a Notary Public in and for the County of Pima, Arizona, this 30th day of October, 2018.


Notary Public



Notice of Proposed Rulemaking
PROPOSING AMENDMENTS
TO PIMA COUNTY CODE TITLE 17
CHAPTER 17.16 ADDING Section 17.16.125
The Pima County Board of Supervisors (BOS) as the governing body for the Pima County Air Quality Control District adopts ordinances which are codified in the Pima County Code (PCC). The Pima County Air Quality Control District operates within the Pima County Department of Environmental Quality (PDEQ). PDEQ periodically proposes updates to PCC through the BOS. This Notice of Proposed Rulemaking proposes the addition of a new section to PCC Title 17, Chapter 17.16, Section 17.16.125: Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM₁₀ Planning Area. The intention of this rulemaking is to meet State Implementation Plan (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented. Under this new section, owners or operators are subject to implement and maintain required Particulate Matter (PM₁₀) control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued Particulate Matter emissions reductions in the Ajo PM₁₀ Planning Area. The inactive tailings and slag storage area must be controlled to 20 percent opacity for fugitive emissions on the property. For both the tailings and slag areas, owners or operators must also install and maintain signs and physical barriers to prevent trespass and redisturbance on the property. The rule text and other related information is available at the PDEQ office, and on the PDEQ website (noted below), or you may request a copy by contacting our department.
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For additional information please contact Sarah Reitmeyer, Regulatory Program Manager, at (520) 724-7437, or visit PDEQ's website at http://webcms.pima.gov/government/environmental_quality/.
(Published October 30, 2018)
Pima County - Notice of Proposed Rule Making RKL

Arizona Daily Star
Rulemaking Public Notice
2nd Public Notice
January 4, 2019

ARIZONA DAILY STAR

Tucson, Arizona

STATE OF ARIZONA)
COUNTY OF PIMA)

Jennie Silvas, being first duly sworn deposes and says: that she is the Advertising Representative of **TNI PARTNERS**, a General Partnership organized and existing under the laws of the State of Arizona, and that it prints and publishes the Arizona Daily Star, a daily newspaper printed and published in the City of Tucson, Pima County, State of Arizona, and having a general circulation in said City, County, State and elsewhere, and that the attached ad was printed and

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published correctly in the entire issue of the said Arizona Daily Star on each of the following dates, to-wit:

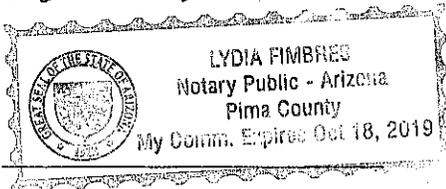
JANUARY 4, 2019

Jennie Silvas

Subscribed and sworn to before me this *4th* day of

JANUARY 2019

Lydia Fimbres
Notary Public



My commission expires

AD NO. 8851363

**SECOND NOTICE
NOTICE OF PROPOSED
RULEMAKING
PROPOSING AMENDMENTS
TO PIMA COUNTY CODE
TITLE 17
CHAPTER 17.16 ADDING
SECTION 17.16.125**

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A public hearing before the Pima County Board of Supervisors will be held on **Tuesday, January 22, 2019**, at or after 9:00 a.m. in the Board Hearing Room, located at 130 W. Congress, 1st floor, Tucson, Arizona.

Comments pertaining to the Notice of Proposed Rulemaking may be submitted at the above noticed public hearing.

For additional information please contact Sarah Reitmeyer, Regulatory Program Manager, at (520) 724-7437 or visit PDEQ's website at http://webcms.pima.gov/government/environmental_quality/

Publish January 4, 2019
Arizona Daily Star

Daily Territorial
Rulemaking Public Notice
2nd Public Notice
January 4, 2019

DAILY TERRITORIAL
WICK COMMUNICATIONS
SUITE 302
333 E W WILCOX DR
SIERRA VISTA AZ 85635
(520) 294-1200

ORDER CONFIRMATION (CONTINUED)

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PUBLIC NOTICE
SECOND NOTICE

Notice of Proposed Rulemaking
PROPOSING AMENDMENTS
TO PIMA COUNTY CODE TITLE 17
CHAPTER 17.16 ADDING Section 17.16.125

The Pima County Board of Supervisors (BOS) as the governing body for the Pima County Air Quality Control District adopts ordinances which are codified in the Pima County Code (PCC). The Pima County Air Quality Control District operates within the Pima County Department of Environmental Quality (PDEQ). PDEQ periodically proposes updates to PCC through the BOS. This Notice of Proposed Rulemaking proposes the addition of a new section to PCC Title 17, Chapter 17.16, Section 17.16.125- Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM10 Planning Area. The intention of this rulemaking is to meet State Implementation Plan (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented. Under this new section, owners or operators are subject to implement and maintain required Particulate Matter (PM10) control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued Particulate Matter emissions reductions in the Ajo PM10 Planning Area. The inactive tailings and slag storage area must be controlled to 20 percent opacity for fugitive emissions on the property. For both the tailings and slag areas, owners or operators must also install and maintain signs and physical barriers to prevent trespass and re-disturbance on the property. The rule text and other related information is available at the PDEQ office, and on the PDEQ website (noted below), or you may request a copy by contacting our department.

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Comments pertaining to the Notice of Proposed Rulemaking may be submitted at the above noticed public hearing.

For additional information please contact Sarah Reitmeyer, Regulatory Program Manager, at (520) 724-7437 or visit PDEQ's website at http://webcms.pima.gov/government/environmental_quality/

PUBLISH: The Daily Territorial
Jan. 4, 2019

Ajo Copper News
Rulemaking Public Notice
2nd Public Notice
January 1, 2019

Ajo Copper News

Hollister David, Publisher
Gabrielle David, Editor
Rayetta Legge, Office Manager

P. O. Box 39 • Ajo, Arizona 85321
Phone (520) 387-7688
FAX (520) 387-7505

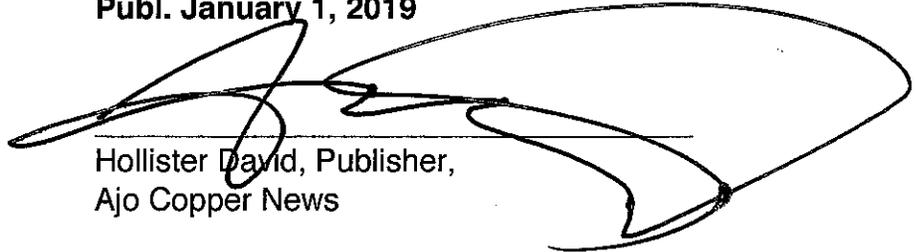
STATE OF ARIZONA)
) ss.
COUNTY OF PIMA)

Hollister David deposes and says that he is the publisher of the *Ajo Copper News*, a weekly newspaper of general circulation and established character, published weekly at Ajo, Pima County, Arizona, and that

SECOND NOTICE/NOTICE OF PROPOSED RULEMAKING PROPOSING AMENDMENTS TO PIMA COUNTY CODE TITLE 17 CHAPTER 17.16 ADDING SECTION 17.16.125

a correct copy of which is attached to this affidavit, was published in the said *Ajo Copper News* every week in the newspaper proper and not in a supplement for

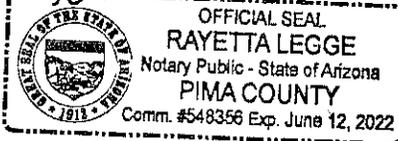
Publ. January 1, 2019



Hollister David, Publisher,
Ajo Copper News

Sworn to and subscribed before me, a Notary Public in and for the County of Pima, Arizona, this 1st day of January, 2018.

Rayetta Legge
Notary Public



SECOND NOTICE
Notice of Proposed Rulemaking
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TO PIMA COUNTY CODE TITLE 17
CHAPTER 17.16 ADDING SECTION 17.16.125
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A public hearing before the Pima County Board of Supervisors will be held on Friday, January 27, 2019, at or after 9:00 a.m. in the Board Hearing Room, located at 130 W. Congress, 1st Floor, Tucson, Arizona.
Comments pertaining to the Notice of Proposed Rulemaking may be submitted at the above noticed public hearing.
For additional information please contact Sarah Reimeyer, Regulatory Program Manager, at (520) 724-7437 or visit PDEQ's website at http://webcms.pima.gov/government/environmental_quality/
(Published January 1, 2019)
Pima County- Notice of Proposed Rule Making - RKL

ATTACHMENT C

Stakeholder E-mail Notification
Notice of Proposed Rulemaking
1st Notice
October 26, 2018

Sarah Reitmeyer

From: Sarah Reitmeyer
Sent: Friday, October 26, 2018 3:09 PM
To: Sarah Reitmeyer
Subject: Notice of Proposed Rulemaking-PCC Title 17 - Ajo Inactive Tailings Impoundment & Slag Storage
Attachments: Notice-Proposed-Rulemaking-Ajo-Tailings-Slag.pdf

Dear Interested Stakeholder,

You are receiving this e-mail because you have expressed interest in notification for the Pima County Department of Environmental Quality (PDEQ) regulatory process (i.e. rulemaking).

The Pima County Board of Supervisors (BOS) as the governing body for the Pima County Air Quality Control District adopts ordinances which are codified in the Pima County Code (PCC). The Pima County Air Quality Control District operates within the Pima County Department of Environmental Quality (PDEQ). PDEQ periodically proposes updates to PCC through the BOS. This Notice of Proposed Rulemaking proposes the addition of a new section to PCC Title 17, Chapter 17.16, Section 17.16.125- Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM₁₀ Planning Area. The intention of this rulemaking is to meet State Implementation Plan (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented. Under this new section, owners or operators are subject to implement and maintain required Particulate Matter (PM₁₀) control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued Particulate Matter emissions reductions in the Ajo PM₁₀ Planning Area. The inactive tailings and slag storage area must be controlled to 20 percent opacity for fugitive emissions on the property. For both the tailings and slag areas, owners or operators must also install and maintain signs and physical barriers to prevent trespass and re-disturbance on the property. The rule text and other related information is available at the PDEQ office, and on the PDEQ website (noted below), or you may request a copy by contacting our department.

A public hearing before the Pima County Board of Supervisors is currently scheduled for:

Date: Tuesday, January 22, 2019
Time: 9:00 A.M. (or after)
Location: Board Hearing Room
130 W. Congress, 1st floor
Tucson, Arizona 85701

Comments pertaining to the Notice of Proposed Rulemaking may be submitted at the above noticed public hearing, in writing to PDEQ (Attn: Sarah Reitmeyer, 33 N Stone Ave Suite 700, Tucson, AZ 85701), via e-mail, or via the [online Public Comment form](#) located on the PDEQ website. Written comments on the Notice of Proposed Rulemaking will be accepted by PDEQ until 5:00 p.m. on November 28, 2018.

Information regarding this Proposed Rulemaking may be viewed under the Air tab on the [PDEQ Draft, Proposed, & Final Rules website](#). Copies are also available at our office, or may be requested via e-mail to: sarah.reitmeyer@pima.gov.

Questions and/or comments may be directed to:

Sarah Reitmeyer

Phone: (520) 724-7437

Fax: (520) 838-7432

sarah.reitmeyer@pima.gov

Sarah Reitmeyer, Regulatory Program Manager

Pima County Department of Environmental Quality

33 N Stone Ave, Suite 700, Tucson, AZ 85701

Phone: (520) 724-7437

Fax: (520) 838-7432

Email: sarah.reitmeyer@pima.gov

Stakeholder E-mail Notification
Notice of Proposed Rulemaking
2nd Notice
January 4, 2019

Sarah Reitmeyer

From: Sarah Reitmeyer
Sent: Friday, January 4, 2019 4:49 PM
To: Sarah Reitmeyer
Subject: Second Notice - NPRM PCC Title 17 - Ajo Inactive Tailings Impoundment & Slag Storage

Dear Interested Stakeholder,

You are receiving this e-mail because you have expressed interest in notification for the Pima County Department of Environmental Quality (PDEQ) regulatory process (i.e. rulemaking).

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Location: Board Hearing Room
130 W. Congress, 1st floor
Tucson, Arizona 85701

Comments pertaining to the Notice of Proposed Rulemaking may be submitted at the above noticed public hearing.

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Questions may be directed to:
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Phone: (520) 724-7437
Fax: (520) 838-7432
sarah.reitmeyer@pima.gov

Thank you for your interest in the rulemaking process.

Sarah Reitmeyer, Regulatory Program Manager
Pima County Department of Environmental Quality
33 N Stone Ave, Suite 700, Tucson, AZ 85701
Phone: (520) 724-7437
Fax: (520) 838-7432
Email: sarah.reitmeyer@pima.gov

**Stakeholder E-mail Notification
SIP Revision Notice
January 4, 2019**

Sarah Reitmeyer

From: Sarah Reitmeyer
Sent: Friday, January 4, 2019 5:04 PM
To: Sarah Reitmeyer
Subject: Second Notice - State Implementation Plan Revision - Ajo PM10 Planning Area

Dear Interested Stakeholder,

You are receiving this e-mail because you have expressed interest in notification for the Pima County Department of Environmental Quality (PDEQ) regulatory process.

The Pima County Department of Environmental Quality (PDEQ) is proposing revisions to the Pima County portion of the Arizona State Implementation Plan. The proposed revision to the Arizona State Implementation Plan (SIP) includes the following rules from Pima County Code (PCC) Title 17: PCC 17.16.125. PCC Section 17.16.125 is a proposed new section that will be heard at the January 22, 2019, Pima County Board of Supervisors Hearing which is noticed separately in this news issue. Pursuant to Section 107(d)(4)(B) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) designated an area in northwest Pima County as a “moderate” nonattainment area for the 1987 24-hour Particulate Matter National Ambient Air Quality Standards (NAAQS), specifically particulate matter with a diameter of 10 micrometers or less (PM₁₀). EPA based its designation on recorded violations of the standard at an ambient monitoring site within the County. The purpose of this SIP revision is to add a specific rule for the Ajo Planning Area to meet CAA requirements for an approved maintenance plan and have the area redesignated to attainment for the 24-hour PM₁₀ NAAQS.

A public hearing regarding this SIP revision is currently scheduled for:

Date: Tuesday, January 29, 2019
Time: 3:00 P.M. (or after)
Location: Joel D. Valdez Main Library
Lower Level Public Meeting Room
101 N. Stone Avenue
Tucson, Arizona 85701

Comments pertaining to the Proposed SIP revision may be submitted at the above noticed public hearing.

Information regarding this Proposed SIP Revision may be viewed on the [PDEQ State Implementation Plan website](#). Copies are also available at our office, or may be requested via e-mail to: sarah.reitmeyer@pima.gov.

Questions may be directed to:
Sarah Reitmeyer
Phone: (520) 724-7437
Fax: (520) 838-7432

sarah.reitmeyer@pima.gov

Thank you for your interest in the regulatory process.

Sarah Reitmeyer, Regulatory Program Manager
Pima County Department of Environmental Quality
33 N Stone Ave, Suite 700, Tucson, AZ 85701
Phone: (520) 724-7437
Fax: (520) 838-7432
Email: sarah.reitmeyer@pima.gov

ATTACHMENT D

Notice of Proposed Rulemaking

NOTICE OF PROPOSED RULEMAKING

**PIMA COUNTY CODE
TITLE 17 – AIR QUALITY CONTROL
CHAPTER 16 - EMISSION LIMITING STANDARDS**

PREAMBLE

- | | | |
|------------------|---------------------------------|---------------------------------|
| <u>1.</u> | <u>Sections Affected</u> | <u>Rulemaking Action</u> |
| | PCC 17.16.125 | New Section |
- 2.** **Statutory authority for the rulemaking:**
Authorizing Statutes: Arizona Revised Statutes (A.R.S.) §§ 49-471.04, 49-402, and 49-479
Implementing Statutes: A.R.S. §§ 49-112, 49-479
- 3.** **The agency’s contact person who can answer questions about the rulemaking:**
Name: Sarah Reitmeyer
Address: Pima County DEQ
33 N. Stone Avenue, Suite 700
Tucson, AZ 85701
Telephone: (520) 724-7437
Fax: (520) 838-7432
E-mail: sarah.reitmeyer@pima.gov
- 4.** **An agency’s justification and reason why a rule should be made, amended, repealed or renumbered, to include an explanation about the rulemaking:**
The Pima County Board of Supervisors (BOS) as the governing body for the Pima County Air Quality Control District adopts ordinances which are codified in the Pima County Code (PCC). The Pima County Air Quality Control District operates within the Pima County Department of Environmental Quality (PDEQ). PDEQ periodically proposes updates to PCC through the BOS. This Notice of Proposed Rulemaking proposes the addition of a new section to PCC Title 17, Chapter 17.16, Section 17.16.125- Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM₁₀ Planning Area. The intention of this rulemaking is to meet State Implementation Plan (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented. Under this new section, owners or operators are subject to implement and maintain required Particulate Matter (PM₁₀) control measures on applicable sources to meet visible emissions and stabilization requirements, in order

to ensure continued particulate matter emissions reductions in the Ajo PM₁₀ Planning Area. The inactive tailings and slag storage area must be controlled to 20 percent opacity for fugitive emissions on the property. For both the tailings and slag areas, owners or operators must also install and maintain signs and physical barriers to prevent trespass and re-disturbance on the property.

5. Demonstration of compliance with A.R.S. § 49-471.04 notice of proposed rule or ordinance making:

Per A.R.S. §49-479(A), the Pima County Board of Supervisors has specific authority, subject to procedural requirements, to adopt and implement rules to control the atmospheric release of air contaminants originating within the Pima County territorial limits. The County may adopt rules that are more stringent than State statute per A.R.S. §49-112 as long as certain conditions are met such as the rule is necessary to address a peculiar local condition and there is credible evidence that the rule is either: (1) necessary to prevent significant threat to public health or the environment and the rule is technically and economically feasible, or (2) the rule is required under federal statute or regulation. The State of Arizona has no similar tailings rule, therefore the measure is more stringent than State rules. This rule, however, is federally required per CAA section 172(d)(3)(E)(iii), insofar as to ensure that the State is able to submit a SIP on behalf of Pima County for the Ajo moderate PM₁₀ nonattainment area, and that there are rules in place to control PM emissions for a significant source of fugitive dust.

6. Reference to any study relevant to the rule that the control officer reviewed and either relied or did not rely on in its evaluation of or justification for the rule, where the public may review each study, all data underlying each study, and any analysis of each study and other supporting material:

No studies were reviewed in reference to this rulemaking action.

7. A showing of good cause why the rules are necessary to promote a statewide interest if the rules will diminish a previous grant of authority of a political subdivision of this state:

Not Applicable.

8. The preliminary summary of the economic, small business, and consumer impact:

This revision will not have an economic impact on businesses in Pima County, and will not impose additional costs on the regulated community, small businesses, political subdivisions, and members of the public beyond that already incurred by reason of federal or state rule or law.

9. The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:

Name: Sarah Reitmeyer
Address: 33 N. Stone Avenue, Suite 700
Tucson, AZ 85701-1429
Telephone: (520) 724-7437
Fax: (520) 838-7432
E-mail: sarah.reitmeyer@pima.gov

10. The time, place, and nature of the proceedings for the making, amendment, or repeal of the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:

Written comments will be accepted if received between the date of this publication and **November 28, 2018 by 5:00 p.m.** Written comments may be mailed or hand delivered to the Pima County Department of Environmental Quality (see #9 above). Written comments received during the comment period will be considered formal comments to the expedited rule or ordinance, and will be responded to in the notice of final rulemaking.

Oral Proceeding: Tuesday, January 22, 2018
Time: 9 a.m.
Location: Pima County Board of Supervisors
Public Hearing Room, First Floor
130 West Congress Street
Tucson, Arizona 85701

11. Any other matters prescribed by the statute that are applicable to the specific agency or to any specific rule or class of rules:

None

12. The full text of the rule follows:

Chapter 17.16 - EMISSION LIMITING STANDARDS

...

Article III. - Emissions from Existing and New Nonpoint Sources

...

17.16.125 - Inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area.

A. Applicability. This Section applies to the owner or operator of the inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area.

B. Definitions. The following definitions apply for the purposes of this Section:

1. “Affected area” means the Ajo PM₁₀ Planning Area.
2. “Ajo PM₁₀ Planning Area” means the area designated in 40 C.F.R. §81.303, adopted as of June 30, 2017 with no future editions or amendments.
3. “Chemical or organic soil stabilizer” means hygroscopic material, solution of water and chemical surfactant foam, non-toxic chemical stabilizer or any other chemical or organic dust palliative that is not prohibited by the U. S. Environmental Protection Agency, the Arizona Department of Environmental Quality, the Pima County Department of Environmental Quality or any applicable law, rule, or regulation, as a treatment material for reducing PM₁₀ emissions.
4. “Coarse” with respect to copper smelter slag material means no less than 3/8 inches in diameter.
5. “Copper smelter slag” means the waste material consisting primarily of iron sulfides separated from copper matte during the smelting and refining of copper ore concentrates.
6. “Crushed rock” means crushed stone or angular rock of a size 2 inches or greater in diameter.
7. “Department” means the Pima County Department of Environmental Quality.
8. “Gravel” means a loose aggregation of rock fragments of low silt content (5% or less) and less than 2 inches in diameter.
9. “High wind event” means an hourly average wind speed of 25 miles per hour or more or an instantaneous wind gust of 40 miles per hour or more as measured in the affected area by a meteorological monitoring station.
10. “Inactive” with respect to the mineral tailings impoundment and slag storage area means that activities in support of ongoing mining operations or for any commercial purpose no longer occur.
11. “Meteorological monitoring station” means one of the following:
 - a. A Pima County Department of Environmental Quality meteorological monitoring station;
 - b. A station operated by the National Weather Service;
 - c. A Remote Automated Weather Station operated by the United States Forest Service, or United States Bureau of Land Management;
 - d. An Automated Weather Observing System or Automated Surface Observing System station, located at an airport, and either operated or certified by the Federal Aviation Administration; or
 - e. Any other meteorological equipment or wind instrument that is installed, calibrated, operated, and maintained by the owner or operator in accordance with the requirements for SLAMS/SPM (non-NCORE) instruments in *Quality Assurance*

Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements Version 2.0 (Final), publication number EPA-454/B-08-002, March 2008, and no future editions or amendments, and manufacturer's specifications, as applicable.

12. “Mineral tailings impoundment” means the earth-fill embankment dams used to store byproducts of prior mining operations that separated mineral ore from other unused material.
13. “Opacity” means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.
14. “Particulate matter” means any airborne finely divided solid or liquid material with an aerodynamic diameter smaller than one hundred micrometers.
15. “PM₁₀” means particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by a reference method contained within 40 C.F.R. Part 50, Appendix J or by an equivalent method designated in accordance with 40 C.F.R. Part 53, both sections adopted as of June 30, 2017 with no future editions or amendments.
16. “Slag storage area” means the area used to store copper smelter slag.
17. “Vegetative cover” means rooted vegetation or unattached vegetative debris lying on the surface that is not susceptible to movement by wind.

C. Control Measures.

1. The owner or operator shall implement and maintain at least one of the following reasonably available control measures to reduce PM₁₀ emissions from the inactive mineral tailings impoundment to ensure compliance with subsection D.1 below:
 - a. Application of crushed rock or gravel;
 - b. Application of chemical or organic soil stabilizers;
 - c. Application of water;
 - d. Establishment of vegetative cover; or
 - e. Any other equivalent methods or techniques approved by the Department and EPA Region IX.
2. The owner or operator shall implement and maintain at least one of the following reasonably available control measures to reduce PM₁₀ emissions from the inactive slag storage area:
 - a. Application of a cap consisting of coarse copper smelter slag material; or
 - b. Any other equivalent methods or techniques approved by the Department and EPA Region IX.
3. To prevent trespass in the inactive mineral tailings impoundment and slag storage area, the owner or operator shall install and maintain the following:
 - a. No trespassing signs; and
 - b. Physical barriers such as fences, gates, posts, shrubs, trees, or other measures to effectively restrict access from the general public.

D. Opacity Standard.

1. The owner or operator shall not cause or allow visible emissions to exceed twenty percent opacity from the mineral tailings impoundment. Opacity shall be determined in accordance with subsection E.1 below.
2. The opacity standard in subsection D.1 above shall not apply during high wind events if the owner or operator has implemented and maintained reasonably available control measures required in subsections C.1 and C.3 above for the mineral tailings impoundment, as documented by subsection F.1.a below.

E. Monitoring.

1. To demonstrate compliance with subsections C.1 and D.1 above, the owner or operator shall conduct weekly visible emission observations of the mineral tailings impoundment.
 - a. All observations shall be conducted in accordance with 40 C.F.R. Part 60, Appendix A, Reference Method 9.
 - b. As an alternative to subsection E.1.a, the owner or operator may elect to conduct observation in accordance with ASTM D7520-16. If so, the owner or operator must have standard operating procedures in place to ensure that equipment is operated and maintained in accordance with manufacturer's specifications per Section 8.1 of ASTM D7520-16.
2. To demonstrate compliance with subsection C.2 above, the owner or operator shall conduct monthly inspections of the slag storage area to assess the effectiveness of control measures. Inspection reports shall, at a minimum, include identification of inspector; inspection date and time; findings of inspection, and any corrective action or preventive measures to be taken.
3. To demonstrate compliance with subsection C.3 above, the owner or operator shall conduct monthly inspections of trespassing signs and physical constraints. Inspection reports shall, at a minimum, include identification of inspector; inspection date and time; findings of inspection, and any corrective action or preventive measures to be taken.

F. Recordkeeping.

1. The owner or operator shall maintain and make available to the Department or EPA Region IX the following records upon request:
 - a. Records of reasonably available control measures implemented and maintained as required by subsection C above;
 - b. Records of visible emission observations required by subsection E.1 above;
 - c. Records of inspections required by subsections E.2 and E.3 above;
 - d. Records of observer EPA Reference Method 9 or ASTM D7520-16 certifications;
 - e. Records of the owner or operator's installation, calibration, certification, operation, and maintenance of any meteorological equipment or wind instrument used for purposes of identifying high wind events; and
 - f. Records of meteorological monitoring station data used for purposes of identifying high wind events.
2. If the owner or operator elects to conduct weekly visual observations in accordance with subsection E.1.b, the following records shall be maintained:

- a. ASTM D7520-16 certification documentation, data sheets, and all raw unaltered JPEGs used for opacity and certification determination, recorded in a form suitable and readily available for expeditious inspection and review.
 - b. Standard operating procedures used to ensure that equipment is operated and maintained in accordance with manufacturer's specifications per Section 8.1 of ASTM D7520-16.
3. All records required by this section shall be maintained by the owner or operator for a minimum of 5 years.

G. Notification.

1. The owner or operator shall provide written notification to the Department at least 30 days prior to initiating weekly visual observations in accordance with subsection E.1. The notification shall identify proposed observation points/locations and provide justification for the selection of those points/locations.
2. The owner or operator shall provide written notification to the Department at least 30 days prior to using any meteorological monitoring station as described in subsection B.11.e.

H. Reporting.

1. The owner or operator shall report to the Department any visible emissions in excess of opacity limit established by subsection D.1. The report shall be in two parts as specified below:
 - a. Notification by telephone or facsimile within 24 hours of the time the owner or operator first learned of the occurrence of excess opacity that includes all available information from subsection H.2.
 - b. Detailed written notification by submission of an excess opacity report within 72 hours of the notification under subsection H.1.a.
2. The excess opacity report shall contain the following information:
 - a. The approximate location at the mineral tailing impoundment where the excess opacity occurred;
 - b. The level of excess opacity as measured in accordance with subsection F;
 - c. The time and duration or expected duration of the excess opacity;
 - d. The nature and cause or suspected cause of the excess opacity;
 - e. The steps that were or are being taken to limit the excess opacity; and
 - f. Any corrective action or preventative measures taken.
3. In the case of continuous or recurring excess opacity events, the notification requirements of this subsection shall be satisfied if the owner or operator provides the required notification after excess opacity events are first detected and includes in the notification an estimate of the time the excess opacity events will continue. Excess opacity occurring after the estimated time period or changes in the nature of the excess opacity as originally reported shall require additional notification pursuant to subsections H.1 and H.2.

...

ATTACHMENT E

E-mail Public Comment
From Mr. Shawn Dolan
With Attachment

Sarah Reitmeyer

From: Shawn Dolan <shawn.dolan@virtuallc.com>
Sent: Wednesday, November 28, 2018 1:28 AM
To: sdolan50@msn.com; Sarah Reitmeyer
Subject: Re: Notice of Proposed Rulemaking-PCC Title 17 - Ajo Inactive Tailings Impoundment & Slag Storage
Attachments: PCC Title 17 - Ajo Inactive Tailings Impoundment & Slag Storage comments 11 27 2018.docx

This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.

Sarah attached please find my comments on the subject proposed rule. Cited is the EPA Ferro Alloy NESHAP public law Jan 17, 2017 that defined ASTM D7520-16 as BACT for the measurement of Opacity of process fugitive emissions and excluded the use of Method 9 for this measurement. Further the comments point to the increase of record keeping being required should an Owner/Operator select to use the superior method ASTM D7520-16. Assuming Method 9 could be used for fugitive emissions, the Owner/Operator is not required to maintain the calibration and certification records of the smoke generator used to certify the Visible Emission Observer who performs the Method 9 VEO to determine Opacity. Therefore the Owner/Operator should not be required to maintain certification records of ASTM D7520-16 DCOT selected to measure opacity.

I agree that the Owner/Operator should maintain a copy of the Digital Camera Operator's certification who performed the observation (took the pictures) in an ASTM D7520 VEO, is much the same way that the Method 9 Observer's personal certification is maintained.

However extending the Owner/Operator requirement to the certification of the DCOT system is just excessive, e.g. No rules currently require the Owner/Operator to maintain the certification records of smoke generator's or the calibration records of the transmissometer's used in the smoke generators to determine the opacity of the test plumes. Which would be the equivalent of what is requested in F2a and the Configuration management records as required in ASTM D7520-16 8.1 would be like saying Method 9 users would have to maintain the maintenance records for the smoke generator, to include fire box flow checks, stack flow checks, blower calibration and NIST filter check etc.

However, Owner/Operators should maintain a Standard Operating Procedure explaining how ASTM D7520 is being implemented at the facility, e.g. who is responsible for the capture of imagery and the processing of the VEO, and the schedule of VEO's to be performed, as well as, the approval of completed VEO's, and their storage and retrieval methodology.

The electronic VEO records produced by DCOT's, already have thumbnails of the pictures and documentation of where in the picture the opacity determination is made, in comparison with hand written Method 9 VEO forms with no supporting information. Therefore, requiring the Owner/Operator to maintain more than the Finalized VEO report produced by the DCOT is excessive and burdensome.

Thank you
Shawn Dolan
801 309 3626

From: Shawn Dolan
Sent: Wednesday, November 7, 2018 5:08 PM
To: sdolan50@msn.com
Subject: Fw: Notice of Proposed Rulemaking-PCC Title 17 - Ajo Inactive Tailings Impoundment & Slag Storage

From: Sarah Reitmeyer <Sarah.Reitmeyer@pima.gov>
Sent: Friday, October 26, 2018 3:08 PM
To: Sarah Reitmeyer
Subject: Notice of Proposed Rulemaking-PCC Title 17 - Ajo Inactive Tailings Impoundment & Slag Storage

Dear Interested Stakeholder,

You are receiving this e-mail because you have expressed interest in notification for the Pima County Department of Environmental Quality (PDEQ) regulatory process (i.e. rulemaking).

The Pima County Board of Supervisors (BOS) as the governing body for the Pima County Air Quality Control District adopts ordinances which are codified in the Pima County Code (PCC). The Pima County Air Quality Control District operates within the Pima County Department of Environmental Quality (PDEQ). PDEQ periodically proposes updates to PCC through the BOS. This Notice of Proposed Rulemaking proposes the addition of a new section to PCC Title 17, Chapter 17.16, Section 17.16.125- Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM₁₀ Planning Area. The intention of this rulemaking is to meet State Implementation Plan (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented. Under this new section, owners or operators are subject to implement and maintain required Particulate Matter (PM₁₀) control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued Particulate Matter emissions reductions in the Ajo PM₁₀ Planning Area. The inactive tailings and slag storage area must be controlled to 20 percent opacity for fugitive emissions on the property. For both the tailings and slag areas, owners or operators must also install and maintain signs and physical barriers to prevent trespass and re-disturbance on the property. The rule text and other related information is available at the PDEQ office, and on the PDEQ website (noted below), or you may request a copy by contacting our department.

A public hearing before the Pima County Board of Supervisors is currently scheduled for:

Date: Tuesday, January 22, 2019
Time: 9:00 A.M. (or after)
Location: Board Hearing Room
130 W. Congress, 1st floor
Tucson, Arizona 85701

Comments pertaining to the Notice of Proposed Rulemaking may be submitted at the above noticed public hearing, in writing to PDEQ (Attn: Sarah Reitmeyer, 33 N Stone Ave Suite 700, Tucson, AZ 85701), via e-mail, or via the [online Public Comment form](#) located on the PDEQ website. Written comments on the Notice of Proposed Rulemaking will be accepted by PDEQ until 5:00 p.m. on November 28, 2018.

Information regarding this Proposed Rulemaking may be viewed under the Air tab on the [PDEQ Draft, Proposed, & Final Rules website](#). Copies are also available at our office, or may be requested via e-mail to: sarah.reitmeyer@pima.gov.

Questions and/or comments may be directed to:

Sarah Reitmeyer
Phone: (520) 724-7437
Fax: (520) 838-7432
sarah.reitmeyer@pima.gov

Sarah Reitmeyer, Regulatory Program Manager
Pima County Department of Environmental Quality
33 N Stone Ave, Suite 700, Tucson, AZ 85701
Phone: (520) 724-7437
Fax: (520) 838-7432
Email: sarah.reitmeyer@pima.gov

Comments on Proposed Rule:

November 28, 2018

Notice of Proposed Rulemaking-PCC Title 17 - Ajo Inactive Tailings Impoundment & Slag Storage

In review of the proposed rule allowing the use of ASTM D7520-16, is a quantum leap forward in documenting the measurement of opacity in the outdoor ambient environment. I applaud PCAQMD for its vision to advance the monitoring of Opacity to better protect the health of Pima County residents.

However, upon detailed review it seems penalizing to the "Owner/Operator" if they choose to use "E.1.B" ASTM D7520-16 versus US EPA Method 9.

ASTM D7520-16 is significantly more reproducible, and auditable than Method 9, as the Opacity readings are backed with digital images of the scene evaluated at the time the evaluation was performed, versus Method 9 which only provides a hand written number of the Opacity witnessed by the Observer. Method 9 does not maintain any evidence of the Opacity witnessed, while ASTM D7520-16 provides digital imagery of the Opacity witnessed. Further 40CFR60 Appendix A, Method 9 is NOT approved for the measurement of Opacity beyond Stationary sources, excepting subpart 600 which provides for its use to document process fugitive emissions.

However, the EPA FerroAlloy NESHAP 40CFR63 DOCKET EPA-HQ-OAR-2010-0895-0280, signed into Public Law Jan 17, 2017, States in Section E, the final decision on the measurement of process fugitive emissions:

"We are finalizing the opacity standards, as proposed in the supplemental proposal. However, regarding compliance demonstration, **we are requiring that facilities measure opacity using DCOT**. In the supplemental proposal, we proposed facilities would need to monitor opacity with Method 9 or DCOT. However, **after considering public comments, we decided to require DCOT rather than have it as optional**. Regarding monitoring frequency, we proposed facilities would need to do opacity readings weekly per furnace building with no opportunity to reduce frequency overtime. After considering public comments, we have decided to require weekly readings initially, as proposed, but allow a facility an opportunity to decrease frequency of opacity readings to monthly per furnace building after 26 weeks of successful, compliant opacity readings."

<https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0895-0280>

Given that ASTM D7520-16 produces significantly more reproducible and repeatable Visible Emissions Observations (VEO) than does Method 9, as documented in the above reference EPA decision to Require ASTM D7520 and not allow the use of Method 9 for the measurement of Process Fugitive Emissions. It seems Pima County should be promoting and incentivizing the use of ASTM D7520-16 versus penalizing the "Owner/Operator" for selecting the use of the superior monitoring method. The Penalty I speak of is section "F2a&b" whereby the "Owner/Operator" is required to:

2. If the owner or operator elects to conduct weekly visual observations in accordance with subsection E.1.b, the following records shall be maintained:

a. ASTM D7520-16 certification documentation, data sheets, and all raw unaltered JPEGs used for opacity and certification determination, recorded in a form suitable and readily available for expeditious inspection and review.

b. Standard operating procedures used to ensure that equipment is operated and maintained in accordance with manufacturer's specifications per Section 8.1 of ASTM D7520-16.

Conversely if the owner operator selects to use Method 9 (Applicability to fugitive dust is highly questionable do to its lack of reproducible evidence), they are not required to maintain the equivalent records, e.g. The calibration records of the Smoke Generator used to certify the human eyes, or the span and drift values required between the smoke school runs, or the answer sheets for the smoke runs by which the human observer "certified" his/her eyes. Further, the Owner/Operator is not required to maintain maintenance records of the smoke generator fire box or feed stock that produces the smoke. Which would be the equivalent record set for Method 9 certification as is being required for ASTM D7520-16 certification.

Effectively, this rule as written penalizes the company for being progressive and selecting the superior monitoring method. Finally, the selection of ASTM D7520-16 produces an electronic record versus a hand written paper form which drives more efficiency to the entire process, yet the selection of ASTM D7520 given these unreasonable "Owner/Operator" documentation requirements.

Commenter proposes that E1a be eliminated as 40CFR60 Appendix A Method 9 should NOT be ALLOWED, as this method is outdated, and precedent exist, in the cited docket and resulting law, that the Best Available Control Technology (BACT) for the measurement of fugitive emissions, is ASTM D7520-16.

Additionally, the commenter proposes that F2a&b be eliminated and replaced with a requirement to "maintain a Standard Operating Policy regarding the use, maintenance, and operations associated with ASTM D7520-16". There is no reason for the Owner/Operator to be required to maintain the certification records of the selected ASTM D7520-16 system, as the ASTM D7520-16 specifically places this responsibility on the "Digital Camera Opacity Technique (DCOT) Vendor/Manufacturer" not the end user e.g. Owner Operator.

Thank you for the progressive direction of this rule, I am hopeful PCDEQ realizes the contradiction of the rule is allowing the use of BACT for the measurement of Opacity and then requiring significantly more documentation of the Owner/Operator for selecting the BACT Method for Measuring Opacity, not to mention the technology PCDEQ uses to enforce opacity standards, yet PCDEQ does not have to maintain

these administrative records best maintained by the Vendor/Manufacturer of the DCOT as required by the referenced Standard.

Thank you for your time and effort in this matter.

Shawn Dolan
801 309 3626

ATTACHMENT F

Notice of Final Rulemaking

NOTICE OF FINAL RULEMAKING

**PIMA COUNTY CODE
TITLE 17 – AIR QUALITY CONTROL
CHAPTER 16 - EMISSION LIMITING STANDARDS**

PREAMBLE

- | | | |
|------------------|--|--|
| <u>1.</u> | <u>Sections Affected</u>
PCC 17.16.125 | <u>Rulemaking Action</u>
New Section |
|------------------|--|--|
- 2.** **Statutory authority for the rulemaking:**
Authorizing Statutes: Arizona Revised Statutes (A.R.S.) §§ 49-471.04, 49-402, and 49-479
Implementing Statutes: A.R.S. §§ 49-112, 49-479
- 3.** **The effective date of the rule:**
February 21, 2019
- 4.** **A list of all previous notices addressing the rule:**
Pursuant to A.R.S. § 49-471.04 PDEQ published notice of the Notice of Proposed Rulemaking on the Pima County Homepage. PDEQ also published the notice on the PDEQ website on October 26, 2018 and January 4, 2019. Public Notices were published in two local newspapers (Arizona Daily Star and the Territorial Newspaper) on October 26, 2018 and January 4, 2019. The Public Notice was also published in the Ajo Copper News on October 30, 2018 and January 1, 2019. The publication of the Notice of Proposed Rulemaking coincided with the Public Notices which allowed for thirty days (30-days) for PDEQ to accept public comment on the proposed ordinance. In addition, PDEQ e-mailed a notice of the proposed ordinance amendments to interested parties who had requested rulemaking notifications in the past.
- 5.** **The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:**
Name: Sarah Reitmeyer
Address: 33 N. Stone Avenue, Suite 700
Tucson, AZ 85701-1429
Telephone: (520) 724-7437
Fax: (520) 838-7432

E-mail: sarah.reitmeyer@pima.gov

6. An explanation of the rule, including the control officer's reasons for initiating the rule:

The Pima County Board of Supervisors (BOS) as the governing body for the Pima County Air Quality Control District adopts ordinances which are codified in the Pima County Code (PCC). The Pima County Air Quality Control District operates within the Pima County Department of Environmental Quality (PDEQ). PDEQ periodically proposes updates to PCC through the BOS. This revision added a new section to PCC Title 17, Chapter 17.16, Section 17.16.125- Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM₁₀ Planning Area. The intention of this rulemaking was to meet State Implementation Plan (SIP) requirements to provide permanence and enforceability for control measures that have already been implemented. Under the new section, owners or operators are subject to implement and maintain required Particulate Matter (PM₁₀) control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued particulate matter emissions reductions in the Ajo PM₁₀ Planning Area. The inactive tailings must be controlled to 20 percent opacity for fugitive emissions on the property. For both the tailings and slag areas, owners or operators must also install and maintain signs and physical barriers to prevent trespass and re-disturbance on the property.

7. Reference to any study relevant to the rule that the control officer reviewed and either relied or did not rely on in its evaluation of or justification for the rule, where the public may review each study, all data underlying each study, and any analysis of each study and other supporting material:

No studies were reviewed in reference to this rulemaking action.

8. A showing of good cause why the rules are necessary to promote a statewide interest if the rules will diminish a previous grant of authority of a political subdivision of this state:

Not Applicable.

9. Summary of the economic, small business, and consumer impact

This revision will not have an economic impact on businesses in Pima County, and will not impose additional costs on the regulated community, small businesses, political subdivisions, and members of the public beyond that already incurred by reason of federal or state rule or law.

10. The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:

Name: Sarah Reitmeyer
Address: 33 N. Stone Avenue, Suite 700
Tucson, AZ 85701-1429
Telephone: (520) 724-7437
Fax: (520) 838-7432
E-mail: sarah.reitmeyer@pima.gov

11. A description of the changes between the proposed rule, including supplemental notices, and final rule (if applicable):

There were no changes between the proposed rule and the final rule.

12. The full text of the rule follows:

Chapter 17.16 - EMISSION LIMITING STANDARDS

...

Article III. - Emissions from Existing and New Nonpoint Sources

...

17.16.125 - Inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area.

A. Applicability. This Section applies to the owner or operator of the inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area.

B. Definitions. The following definitions apply for the purposes of this Section:

1. "Affected area" means the Ajo PM₁₀ Planning Area.
2. "Ajo PM₁₀ Planning Area" means the area designated in 40 C.F.R. §81.303, adopted as of June 30, 2017 with no future editions or amendments.
3. "Chemical or organic soil stabilizer" means hygroscopic material, solution of water and chemical surfactant foam, non-toxic chemical stabilizer or any other chemical or organic dust palliative that is not prohibited by the U. S. Environmental Protection Agency, the Arizona Department of Environmental Quality, the Pima County Department of Environmental Quality or any applicable law, rule, or regulation, as a treatment material for reducing PM₁₀ emissions.
4. "Coarse" with respect to copper smelter slag material means no less than 3/8 inches in diameter.

5. “Copper smelter slag” means the waste material consisting primarily of iron sulfides separated from copper matte during the smelting and refining of copper ore concentrates.
6. “Crushed rock” means crushed stone or angular rock of a size 2 inches or greater in diameter.
7. “Department” means the Pima County Department of Environmental Quality.
8. “Gravel” means a loose aggregation of rock fragments of low silt content (5% or less) and less than 2 inches in diameter.
9. “High wind event” means an hourly average wind speed of 25 miles per hour or more or an instantaneous wind gust of 40 miles per hour or more as measured in the affected area by a meteorological monitoring station.
10. “Inactive” with respect to the mineral tailings impoundment and slag storage area means that activities in support of ongoing mining operations or for any commercial purpose no longer occur.
11. “Meteorological monitoring station” means one of the following:
 - a. A Pima County Department of Environmental Quality meteorological monitoring station;
 - b. A station operated by the National Weather Service;
 - c. A Remote Automated Weather Station operated by the United States Forest Service, or United States Bureau of Land Management;
 - d. An Automated Weather Observing System or Automated Surface Observing System station, located at an airport, and either operated or certified by the Federal Aviation Administration; or
 - e. Any other meteorological equipment or wind instrument that is installed, calibrated, operated, and maintained by the owner or operator in accordance with the requirements for SLAMS/SPM (non-NCORE) instruments in *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements Version 2.0 (Final)*, publication number EPA-454/B-08-002, March 2008, and no future editions or amendments, and manufacturer's specifications, as applicable.
12. “Mineral tailings impoundment” means the earth-fill embankment dams used to store byproducts of prior mining operations that separated mineral ore from other unused material.
13. “Opacity” means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.
14. “Particulate matter” means any airborne finely divided solid or liquid material with an aerodynamic diameter smaller than one hundred micrometers.
15. “PM₁₀” means particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by a reference method contained within 40 C.F.R. Part 50, Appendix J or by an equivalent method designated in accordance with 40 C.F.R. Part 53, both sections adopted as of June 30, 2017 with no future editions or amendments.
16. “Slag storage area” means the area used to store copper smelter slag.

17 “Vegetative cover” means rooted vegetation or unattached vegetative debris lying on the surface that is not susceptible to movement by wind.

C. Control Measures.

1. The owner or operator shall implement and maintain at least one of the following reasonably available control measures to reduce PM₁₀ emissions from the inactive mineral tailings impoundment to ensure compliance with subsection D.1 below:
 - a. Application of crushed rock or gravel;
 - b. Application of chemical or organic soil stabilizers;
 - c. Application of water;
 - d. Establishment of vegetative cover; or
 - e. Any other equivalent methods or techniques approved by the Department and EPA Region IX.
2. The owner or operator shall implement and maintain at least one of the following reasonably available control measures to reduce PM₁₀ emissions from the inactive slag storage area:
 - a. Application of a cap consisting of coarse copper smelter slag material; or
 - b. Any other equivalent methods or techniques approved by the Department and EPA Region IX.
3. To prevent trespass in the inactive mineral tailings impoundment and slag storage area, the owner or operator shall install and maintain the following:
 - a. No trespassing signs; and
 - b. Physical barriers such as fences, gates, posts, shrubs, trees, or other measures to effectively restrict access from the general public.

D. Opacity Standard.

1. The owner or operator shall not cause or allow visible emissions to exceed twenty percent opacity from the mineral tailings impoundment. Opacity shall be determined in accordance with subsection E.1 below.
2. The opacity standard in subsection D.1 above shall not apply during high wind events if the owner or operator has implemented and maintained reasonably available control measures required in subsections C.1 and C.3 above for the mineral tailings impoundment, as documented by subsection F.1.a below.

E. Monitoring.

1. To demonstrate compliance with subsections C.1 and D.1 above, the owner or operator shall conduct weekly visible emission observations of the mineral tailings impoundment.
 - a. All observations shall be conducted in accordance with 40 C.F.R. Part 60, Appendix A, Reference Method 9.
 - b. As an alternative to subsection E.1.a, the owner or operator may elect to conduct observation in accordance with ASTM D7520-16. If so, the owner or operator must have standard operating procedures in place to ensure that equipment is operated and maintained in accordance with manufacturer’s specifications per Section 8.1 of ASTM D7520-16.

2. To demonstrate compliance with subsection C.2 above, the owner or operator shall conduct monthly inspections of the slag storage area to assess the effectiveness of control measures. Inspection reports shall, at a minimum, include identification of inspector; inspection date and time; findings of inspection, and any corrective action or preventive measures to be taken.
3. To demonstrate compliance with subsection C.3 above, the owner or operator shall conduct monthly inspections of trespassing signs and physical constraints. Inspection reports shall, at a minimum, include identification of inspector; inspection date and time; findings of inspection, and any corrective action or preventive measures to be taken.

F. Recordkeeping.

1. The owner or operator shall maintain and make available to the Department or EPA Region IX the following records upon request:
 - a. Records of reasonably available control measures implemented and maintained as required by subsection C above;
 - b. Records of visible emission observations required by subsection E.1 above;
 - c. Records of inspections required by subsections E.2 and E.3 above;
 - d. Records of observer EPA Reference Method 9 or ASTM D7520-16 certifications;
 - e. Records of the owner or operator's installation, calibration, certification, operation, and maintenance of any meteorological equipment or wind instrument used for purposes of identifying high wind events; and
 - f. Records of meteorological monitoring station data used for purposes of identifying high wind events.
2. If the owner or operator elects to conduct weekly visual observations in accordance with subsection E.1.b, the following records shall be maintained:
 - a. ASTM D7520-16 certification documentation, data sheets, and all raw unaltered JPEGs used for opacity and certification determination, recorded in a form suitable and readily available for expeditious inspection and review.
 - b. Standard operating procedures used to ensure that equipment is operated and maintained in accordance with manufacturer's specifications per Section 8.1 of ASTM D7520-16.
3. All records required by this section shall be maintained by the owner or operator for a minimum of 5 years.

G. Notification.

1. The owner or operator shall provide written notification to the Department at least 30 days prior to initiating weekly visual observations in accordance with subsection E.1. The notification shall identify proposed observation points/locations and provide justification for the selection of those points/locations.
2. The owner or operator shall provide written notification to the Department at least 30 days prior to using any meteorological monitoring station as described in subsection B.11.e.

H. Reporting.

1. The owner or operator shall report to the Department any visible emissions in excess of opacity limit established by subsection D.1. The report shall be in two parts as specified below:
 - a. Notification by telephone or facsimile within 24 hours of the time the owner or operator first learned of the occurrence of excess opacity that includes all available information from subsection H.2.
 - b. Detailed written notification by submission of an excess opacity report within 72 hours of the notification under subsection H.1.a.
2. The excess opacity report shall contain the following information:
 - a. The approximate location at the mineral tailing impoundment where the excess opacity occurred;
 - b. The level of excess opacity as measured in accordance with subsection F;
 - c. The time and duration or expected duration of the excess opacity;
 - d. The nature and cause or suspected cause of the excess opacity;
 - e. The steps that were or are being taken to limit the excess opacity; and
 - f. Any corrective action or preventative measures taken.
3. In the case of continuous or recurring excess opacity events, the notification requirements of this subsection shall be satisfied if the owner or operator provides the required notification after excess opacity events are first detected and includes in the notification an estimate of the time the excess opacity events will continue. Excess opacity occurring after the estimated time period or changes in the nature of the excess opacity as originally reported shall require additional notification pursuant to subsections H.1 and H.2.

...

ATTACHMENT G

State Implementation Plan Public Notices

Pima County Homepage
State Implementation Plan Revision
Public Notice
1st Public Notice
October 26, 2018

The screenshot shows the Pima County homepage with a navigation bar at the top containing links for Library, Calendar, Employment, and Contact Us, along with social media icons. Below the navigation bar is a search box and a main menu with categories like Recreation, Health, Development, Business, Community, Environment, and Government. The main content area features a large banner image of a cityscape with a 'Public Service' message about monsoon weather. Below the banner are five tabs: TOP NEWS, ENGAGE, LIVE, WORK, and PLAY. The 'TOP NEWS' tab is active, displaying three columns of content: News Releases, Featured News, and Quick Links. The 'News Releases' column includes a highlighted item: '- DEQ proposes revisions to State Implementation plan'. The 'Featured News' column includes two items with images: 'Elections set to mail sample ballots for Nov. 6 election' and 'McKenzie Ranch Trails Park dedication set for Nov. 3'. The 'Quick Links' column lists various services and information. At the bottom of the page, there is a footer with the Pima County logo, copyright information, and several utility links.

Library | Calendar | Employment | Contact Us

PIMA COUNTY

Recreation | Health | Development | Business | Community | Environment | Government

Public Service
It's monsoon time! Drive safe and when in doubt, turn around. For weather related road conditions, call the Sheriff's Department hotline at (520) 547-7510.

TOP NEWS | ENGAGE | LIVE | WORK | PLAY

News Releases

- DEQ proposes revisions to State Implementation plan
- DEQ proposed rulemaking changes
- County projects recognized with Common Ground Awards
- Students will earn their High School Equivalency Diplomas at Nov. 2 Las Artes ceremony
- PDEQ suggests idling less on Halloween

Read More News

Featured News

Elections set to mail sample ballots for Nov. 6 election
Look for polling place locations on the samples.

McKenzie Ranch Trails Park dedication set for Nov. 3
Park built by NRPR and Sonoran Desert Mountain Bicyclists.

Read More News

Quick Links

- Board of Supervisors
- Board Agendas
- County Administrator
- Transparency
- Proposed Taxes and Fees
- Public Records Request
- County Budget
- Property Taxes
- Volunteer
- Subscribe to Newsletter
- Understanding your TUSD tax bill

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Pima County Department of
Environmental Quality Homepage
State Implementation Plan Revision
Public Notice
1st Public Notice
October 26, 2018

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PIMA COUNTY

Custom Search

Recreation | Health | Development | Business | Community | Environment | Government

Pima County » Government » Environmental Quality

Environmental Quality

Pima County Department of Environmental Quality (PDEQ), formed in 1989, serves Pima County by protecting public health and the environment. PDEQ operates programs to monitor air and water quality, hazardous waste, solid waste, and assist in waste minimization and pollution prevention. PDEQ also provides public outreach, education, and citizens' assistance; processes environmental permits; and responds to public complaints and inquiries with investigations and enforcement.

Our Mission

Preserve and protect the environment of Pima County for the long-term benefit of residents' health, welfare, safety, and quality of life. Identify and respond to environmental issues by providing public services including monitoring, enforcement, information, education, and solid waste management.

Featured News

- **October 26, 2018 - DEQ proposes revisions to State implementation plan**
- [October 26, 2018 - DEQ proposed rulemaking changes](#)
- [October 24, 2018 - PDEQ suggests idling less on Halloween](#)
- [October 11, 2018 - Air Quality Health Watch for Green Valley](#)
- [August 08, 2018 - Pima DEQ issues revised Air Quality Permit for TEP](#)

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Air | Water | Waste & Recycling | Information & Outreach | Complaints | Kids Corner | Fees

Air Program

The [Air Program](#) is comprised of multiple sections which address different issues regarding air quality.

Department of Environmental Quality
33 N. Stone Ave., Suite 700
Tucson, AZ 85701
Phone: (520) 724-7400
Fax: (520) 838-7432

- Department Home
- Department News
- Hours
- Department Directory
- Send Department Feedback
- Report a Complaint
- Calendar
- Boards, Commissions & Committees
- Rules & Regulations
- Reports & Publications
- Forms
- Permits
- Fees

http://webcms.pima.gov/government/environmental_quality/

Pima County Department of
Environmental Quality Newsroom Article
State Implementation Plan Revision
Public Notice
1st Public Notice
October 26, 2018

The screenshot shows the Pima County website's newsroom page. At the top, there is a navigation bar with links for Library, Calendar, Employment, and Contact Us, along with social media icons for Twitter and Facebook. Below this is a search bar labeled 'Custom Search' and a navigation menu with categories: Recreation, Health, Development, Business, Community, Environment, and Government. The breadcrumb trail reads: Pima County » Newsroom » Environmental Quality Newsroom » Homepage Articles » DEQ proposes revisions to State implementation plan. The main heading is 'DEQ proposes revisions to State implementation plan' with a date of 'Oct 26, 2018' and a 'Read More News' link. A 'Share' button is visible. The article title is 'PUBLIC NOTICE RELATED TO AIR QUALITY PROPOSING TO REVISE THE PIMA COUNTY PORTION OF THE ARIZONA STATE IMPLEMENTATION PLAN'. The text of the article discusses the Pima County Department of Environmental Quality (PDEQ) proposing revisions to the Arizona State Implementation Plan (SIP), including a new section PCC 17.16.125 to be heard at a public hearing on January 22, 2019. It also mentions a public hearing on Tuesday, January 29, 2019, and provides contact information for Sarah Reitmeyer. The footer contains copyright information for 2018 and links for Accessibility, HIPAA/Privacy Statement, Security, Sitemap, Terms of Use, and Website Feedback.

<http://webcms.pima.gov/cms/One.aspx?portalId=169&pageId=455814>

Pima County Department of
 Environmental Quality
 State Implementation Plan Website
 SIP Revision Public Notice
 1st Public Notice
 October 26, 2018

State Implementation Plan

Required by the Clean Air Act a State Implementation Plan (SIP) is a federally approved and enforceable plan developed by a state or local authority which identifies how it will meet and/or maintain the National Ambient Air Quality Standards (NAAQS). There are various types of SIPs developed by a state or local authority which contain certain rules showing the ability to: attain, maintain, and enforce the NAAQS. Different types of SIPs include: Attainment, Non-Attainment, Maintenance, and Infrastructure SIPs. Attainment of the NAAQS within Pima County is covered under the Pima County portion of the Arizona State Implementation Plan(s).

U.S. Environmental Protection Agency [Status of Pima County State Implementation Plan \(SIP\)](#)

To be effective, you need to be involved as early in the SIP process as possible to do so you can [Join PDEQ Rules & Regulations Mailing List](#).

Draft, Proposed, and Final State Implementation Plan (SIP) Actions

Inactive mineral tailings impoundment and slag storage area within the Ajo PM10 Planning Area

Summary: PDEQ is proposing revisions to the Pima County portion of the Arizona State Implementation Plan. The proposed revision to the Arizona State Implementation Plan (SIP) includes the following rules from Pima County Code (PCC) Title 17: PCC 17.16.125. PCC Section 17.16.125 is a proposed new section that will be heard at the January 22, 2019, Pima County Board of Supervisors Hearing which is noticed separately in this news issue. Pursuant to Section 107(d)(4)(B) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) designated an area in northwest Pima County as a "moderate" nonattainment area for the 1987 24-hour Particulate Matter National Ambient Air Quality Standards (NAAQS), specifically particulate matter with a diameter of 10 micrometers or less (PM10). EPA based its designation on recorded violations of the standard at an ambient monitoring site within the County. The purpose of this SIP revision is to add a specific rule for the Ajo Planning Area to meet CAA requirements for an approved maintenance plan and have the area redesignated to attainment for the 24-hour PM10 NAAQS.

Documents	Deadline for Public Comment	Public Hearing Date
Proposed Inactive Tailings&Slag Processing Area rule	November 28, 2018	January 29, 2019
Public Notice-10-26-2018		

Infrastructure SIP Revision

Summary: PDEQ is proposing revisions to the Pima County portion of the Arizona SIP in response to two Federal Register notices of Final Rule pertaining to rules within Pima County Code that are not yet included in the SIP. In response to the EPA actions published in the FR, PDEQ is proposing to submit PCC 17.04.190, PCC 17.12.040, and PCC 17.24.040 for incorporation into the Arizona SIP.

<http://webcms.pima.gov/cms/one.aspx?portalId=169&pageId=63172>

Pima County Homepage
News Release
State Implementation Plan Revision
Public Notice
2nd Public Notice
January 4, 2019

The screenshot shows the Pima County homepage with a dark blue header. The header includes the Pima County logo, a search bar with the text "Custom Search", and navigation links for "Library", "Calendar", "Employment", and "Contact Us". Below the header is a horizontal menu with categories: "Recreation", "Health", "Development", "Business", "Community", "Environment", and "Government". The main content area features a large image of a cityscape with a "Public Service" alert: "It's monsoon time! Drive safe and when in doubt, turn around. For weather related road conditions, call the Sheriff's Department hotline at (520) 547-7510." Below the image are five tabs: "TOP NEWS", "ENGAGE", "LIVE", "WORK", and "PLAY". The "News Releases" section lists several items, with the first one highlighted in yellow: "DEQ proposes revisions to State implementation plan". The "Featured News" section includes two articles: "Elections set to mail sample ballots for Nov. 6 election" and "McKenzie Ranch Trails Park dedication set for Nov. 3". The "Quick Links" section lists various services like "Board of Supervisors", "Board Agendas", and "County Administrator". The footer contains the Pima County seal, copyright information, and links for "Accessibility", "HIPAA/Privacy Statement", "Security", "Sitemap", "Terms of Use", and "Website Feedback".

<http://webcms.pima.gov/>

Pima County Department of
Environmental Quality Homepage
State Implementation Plan Revision
Public Notice
2nd Public Notice
January 4, 2019

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PIMA COUNTY

Custom Search

Recreation | Health | Development | Business | Community | Environme

Pima County » Government » Environmental Quality

Environmental Quality

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Featured News

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- [October 24, 2018 - PDEQ suggests idling less on Halloween](#)
- [October 11, 2018 - Air Quality Health Watch for Green Valley](#)
- [August 08, 2018 - Pima DEQ issues revised Air Quality Permit for TEP](#)
- [August 03, 2018 - PDEQ issues another High Pollution Advisory](#)

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Air Program

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http://webcms.pima.gov/government/environmental_quality/

Pima County Department of
Environmental Quality Newsroom Article
State Implementation Plan Revision
Public Notice
2nd Public Notice
January 4, 2019

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<http://webcms.pima.gov/cms/One.aspx?portalId=169&pageId=465197>

Pima County Department of
 Environmental Quality
 State Implementation Plan Website
 SIP Revision Public Notice
 2nd Public Notice
 January 4, 2019

State Implementation Plan

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U.S. Environmental Protection Agency [Status of Pima County State Implementation Plan \(SIP\)](#)

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Draft, Proposed, and Final State Implementation Plan (SIP) Actions

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Documents	Deadline for Public Comment	Public Hearing Date
Proposed Inactive Tailings&Slag Processing Area rule 1st Public Notice-10-26-2018 2nd Public Notice-01-04-2019	Comment Period Closed	Tuesday, January 29, 2019

<http://webcms.pima.gov/cms/one.aspx?portalId=169&pageId=63172>

Newspaper Public Notices **State Implementation Plan Revision**

Arizona Daily Star
SIP Revision
1st Public Notice
October 26, 2018

ARIZONA DAILY STAR

Tucson, Arizona

STATE OF ARIZONA)
COUNTY OF PIMA)

Debbie Freedle, being first duly sworn deposes and says: that she is the Advertising Representative of **TNI PARTNERS**, a General Partnership organized and existing under the laws of the State of Arizona, and that it prints and publishes the Arizona Daily Star, a daily newspaper printed and published in the City of Tucson, Pima County, State of Arizona, and having a general circulation in said City, County, State and elsewhere, and that the attached ad was printed and

Legal Notice

published correctly in the entire issue of the said Arizona Daily Star on each of the following dates, to-wit:

October 26, 2018

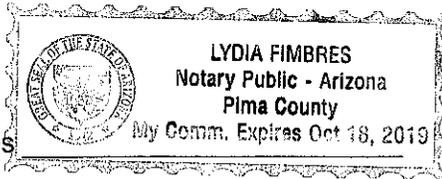
Debbie Freedle

Subscribed and sworn to before me this 30th day of

October 2018

Lydia Fimbres

Notary Public



My commission expires

AD NO.

8836443

PUBLIC NOTICE RELATED TO AIR QUALITY PROPOSING TO REVISE THE PIMA COUNTY PORTION OF THE ARIZONA STATE IMPLEMENTATION PLAN

The Pima County Department of Environmental Quality (PDEQ) is proposing revisions to the Pima County portion of the Arizona State Implementation Plan. The proposed revision to the Arizona State Implementation Plan (SIP) includes the following rules from Pima County Code (PCC) Title 17: PCC 17.16.125. PCC Section 17.16.125 is a proposed new section that will be heard at the January 22, 2019, Pima County Board of Supervisors Hearing which is noticed separately in this news issue. Pursuant to Section 107(d)(4)(B) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) designated an area in northwest Pima County as a "moderate" nonattainment area for the 1987 24-hour Particulate Matter National Ambient Air Quality Standards (NAAQS), specifically particulate matter with a diameter of 10 micrometers or less (PM10). EPA based its designation on recorded violations of the standard at an ambient monitoring site within the County. The purpose of this SIP revision is to add a specific rule for the Ajo Planning Area to meet CAA requirements for an approved maintenance plan and have the area redesignated to attainment for the 24-hour PM10 NAAQS.

A public hearing will be held on Tuesday, January 29, 2019, at or after 3:00 p.m. in the Joel D. Valdez Main Library, public meeting room, located at 101 N Stone Avenue, Tucson, Arizona. Comments pertaining to the proposed revision to the Pima County portion of the Arizona SIP may be submitted at the above noticed public hearing, in writing to PDEQ (Attn: Sarah Reitmeyer, 33 N Stone Ave Suite 700, Tucson, AZ 85701), or via e-mail to sarah.reitmeyer@pima.gov. Written comments on the proposed revision to the Pima County Portion of the Arizona SIP will be accepted by PDEQ from October 26, 2018, until November 28, 2018, at 5:00 p.m.

The proposed SIP revision is available for review at the PDEQ office, and on the PDEQ website http://webcms.pima.gov/government/environmental_quality/. If requested, PDEQ can email a pdf version of the proposed SIP revision to anyone requesting this service. For additional information, please call Sarah Reitmeyer at (520) 724-7437.

Publish October 26, 2018
Arizona Daily Star

Daily Territorial
State Implementation Plan Revision
Public Notice
1st Public Notice
October 26, 2018

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NOTICE OF HEARING
PUBLIC NOTICE RELATED TO AIR QUALITY
PROPOSING TO REVISE THE PIMA COUNTY PORTION OF THE ARIZONA STATE IMPLEMENTATION PLAN

The Pima County Department of Environmental Quality (PDEQ) is proposing revisions to the Pima County portion of the Arizona State Implementation Plan. The proposed revision to the Arizona State Implementation Plan (SIP) includes the following rules from Pima County Code (PCC) Title 17: PCC 17.16.125, PCC Section 17.16.125 is a proposed new section that will be heard at the January 22, 2019, Pima County Board of Supervisors Hearing which is noticed separately in this news issue. Pursuant to Section 107(d)(4)(B) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) designated an area in northwest Pima County as a "moderate" nonattainment area for the 1987 24-hour Particulate Matter National Ambient Air Quality Standards (NAAQS), specifically particulate matter with a diameter of 10 micrometers or less (PM10). EPA based its designation on recorded violations of the standard at an ambient monitoring site within the County. The purpose of this SIP revision is to add a specific rule for the Ajo Planning Area to meet CAA requirements for an approved maintenance plan and have the area redesignated to attainment for the 24-hour PM10 NAAQS.

A public hearing will be held on Tuesday, January 29, 2019, at or after 3:00 p.m. in the Joel D. Valdez Main Library public meeting room, located at 101 N Stone Avenue, Tucson, Arizona. Comments pertaining to the proposed revision to the Pima County portion of the Arizona SIP may be submitted at the above noticed public hearing, in writing to PDEQ (Attn: Sarah Reitmeyer, 33 N Stone Ave Suite 700, Tucson, AZ 85701), or via e-mail to sarah.reitmeyer@pima.gov. Written comments on the proposed revision to the Pima County Portion of the Arizona SIP will be accepted by PDEQ from October 26, 2018, until November 28, 2018, at 5:00 p.m.

The proposed SIP revision is available for review at the PDEQ office, and on the PDEQ website http://webcms.pima.gov/government/environmental_quality/. If requested, PDEQ can email a pdf version of the proposed SIP revision to anyone requesting this service. For additional information, please call Sarah Reitmeyer at (520) 724-7437.

PUBLISH: The Daily Territorial
OCTOBER 26, 2018

Ajo Copper News
State Implementation Plan Revision
Public Notice
1st Public Notice
October 30, 2018

RECEIVED BY
PIMA COUNTY
NOV 5 2018
DEPARTMENT OF ENVIRONMENTAL QUALITY

Ajo Copper News

Hollister David, Publisher
Gabrielle David, Editor
Rayetta Legge, Office Manager

P. O. Box 39 • Ajo, Arizona 85321
Phone (520) 387-7688
FAX (520) 387-7505

STATE OF ARIZONA)
) ss.
COUNTY OF PIMA)

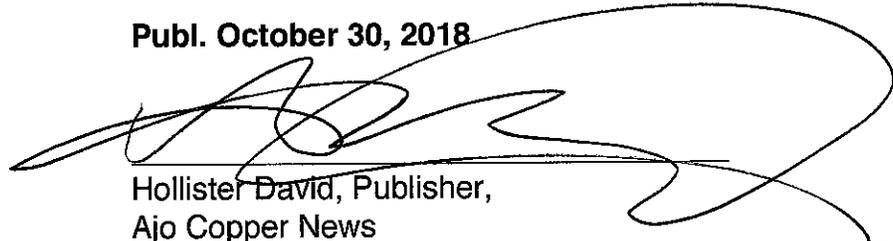
Hollister David deposes and says that he is the publisher of the *Ajo Copper News*, a weekly newspaper of general circulation and established character, published weekly at Ajo, Pima County, Arizona, and that

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(Published October 30, 2018)
Pima County Notice Related To Air Quality RKL

PUBLIC NOTICE RELATED TO AIR QUALITY PROPOSING TO REVISE THE PIMA COUNTY PORTION OF THE ARIZONA STATE IMPLEMENTATION PLAN

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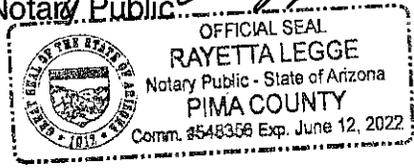
Publ. October 30, 2018



Hollister David, Publisher,
Ajo Copper News

Sworn to and subscribed before me, a Notary Public in and for the County of Pima, Arizona, this 30th day of **October, 2018**.

Rayetta Legge
Notary Public



Arizona Daily Star
State Implementation Plan Revision
Public Notice
2nd Public Notice
January 4, 2019

ARIZONA DAILY STAR

Tucson, Arizona

STATE OF ARIZONA)
COUNTY OF PIMA)

Jennie Silvas, being first duly sworn deposes and says: that she is the Advertising Representative of **TNI PARTNERS**, a General Partnership organized and existing under the laws of the State of Arizona, and that it prints and publishes the Arizona Daily Star, a daily newspaper printed and published in the City of Tucson, Pima County, State of Arizona, and having a general circulation in said City, County, State and elsewhere, and that the attached ad was printed and

Legal Notice

published correctly in the entire issue of the said Arizona Daily Star on each of the following dates, to-wit:

JANUARY 4, 2019

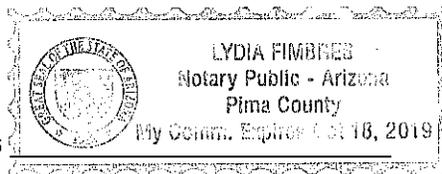
Jennie Silvas

Subscribed and sworn to before me this 9th day of

January 2019

Lydia Fimbres

Notary Public



My commission expires

AD NO. 8851368

**SECOND NOTICE
PUBLIC NOTICE RELATED TO
AIR QUALITY
PROPOSING TO REVISE THE
PIMA COUNTY PORTION OF
THE ARIZONA STATE
IMPLEMENTATION PLAN**

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Publish January 4, 2019
Arizona Daily Star

Daily Territorial
State Implementation Plan Revision
Public Notice
2nd Public Notice
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Jan. 4, 2019

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2nd Public Notice
January 1, 2019

Ajo Copper News

Hollister David, Publisher
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Rayetta Legge, Office Manager

P. O. Box 39 • Ajo, Arizona 85321
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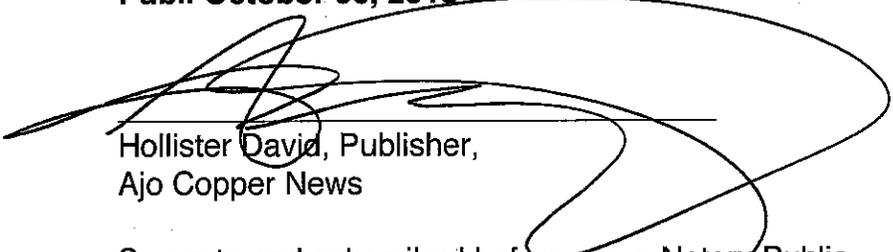
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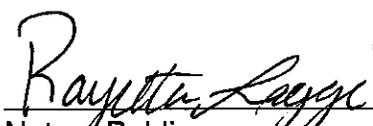
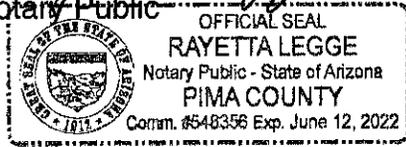
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Ajo Copper News

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Notary Public

OFFICIAL SEAL
RAYETTA LEGGE
Notary Public - State of Arizona
PIMA COUNTY
Comm. #548356 Exp. June 12, 2022

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(Published October 30, 2018)
Pima County - Notice Related To Air Quality RKL

Appendix 3

Pima County Certified Public Hearing Documents

**State Implementation Plan Revision
Adding PCC Section 17.16.125 - Inactive
mineral tailings impoundment
and slag storage area
within the Ajo PM₁₀ Planning Area**



PIMA COUNTY

ENVIRONMENTAL QUALITY

**SIP REVISION
PUBLIC HEARING
DOCUMENTATION**

**INACTIVE MINERAL TAILINGS IMPOUNDMENT
AND SLAG STORAGE AREA WITHIN
THE AJO PM₁₀ PLANNING AREA**

April 19, 2019

Pima County Department of Environmental Quality
33 North Stone Avenue, Suite 700
Tucson, AZ 85701

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SIP Revision Public Hearing Agenda



PIMA COUNTY

ENVIRONMENTAL QUALITY

33 N. Stone Avenue, Suite 700
Tucson, Arizona 85701-1429

http://webcms.pima.gov/government/environmental_quality/

Ursula Kramer Nelson, P.E.
Director

(520) 724-7400
FAX (520) 838-7432

Proposed State Implementation Plan Revisions Hearing Agenda

**Tuesday, January 29, 2019
3:00p.m. to 4:00 p.m.
Joel D. Valdez Main Library
101 N Stone Avenue, Tucson, Arizona**

- 3:00 p.m. Introductions, review of agenda**
- 3:10 p.m. Overview:
Proposed Revisions to the Pima County Portion of the
Arizona State Implementation Plan (SIP)**
- 3:25p.m. Oral Comment Period – Recorded for Public Record**
- 3:45 p.m. Closing remarks**

Comments?

Comments pertaining to the proposed SIP revision may be submitted at the above noticed public hearing.

For additional information, please call Sarah Reitmeyer at (520) 724-7437.

Thank you very much for taking the time to attend our Public Hearing.

Proposed SIP Revision Rule Text



Proposed Revision to the Pima County Portion of the Arizona State Implementation Plan

This submittal will add one rule to the existing approved Arizona State Implementation Plan (SIP), in particular the Pima County portion of the Arizona SIP. The rule that will be added is Pima County Code Title 17: Air Quality Control, Chapter 16: Emissions Limiting Standards, Section 17.16.125, titled Inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area.

The text of this rule is provided here, additions to the SIP are underlined.

17.16.125 - Inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area.

A. Applicability. This Section applies to the owner or operator of the inactive mineral tailings impoundment and slag storage area within the Ajo PM₁₀ Planning Area.

B. Definitions. The following definitions apply for the purposes of this Section:

1. "Affected area" means the Ajo PM₁₀ Planning Area.
2. "Ajo PM₁₀ Planning Area" means the area designated in 40 C.F.R. §81.303, adopted as of June 30, 2017 with no future editions or amendments.
3. "Chemical or organic soil stabilizer" means hygroscopic material, solution of water and chemical surfactant foam, non-toxic chemical stabilizer or any other chemical or organic dust palliative that is not prohibited by the U. S. Environmental Protection Agency, the Arizona Department of Environmental Quality, the Pima County Department of Environmental Quality or any applicable law, rule, or regulation, as a treatment material for reducing PM₁₀ emissions.
4. "Coarse" with respect to copper smelter slag material means no less than 3/8 inches in diameter.
5. "Copper smelter slag" means the waste material consisting primarily of iron sulfides separated from copper matte during the smelting and refining of copper ore concentrates.
6. "Crushed rock" means crushed stone or angular rock of a size 2 inches or greater in diameter.
7. "Department" means the Pima County Department of Environmental Quality.
8. "Gravel" means a loose aggregation of rock fragments of low silt content (5% or less) and less than 2 inches in diameter.



ENVIRONMENTAL QUALITY

9. “High wind event” means an hourly average wind speed of 25 miles per hour or more or an instantaneous wind gust of 40 miles per hour or more as measured in the affected area by a meteorological monitoring station.
10. “Inactive” with respect to the mineral tailings impoundment and slag storage area means that activities in support of ongoing mining operations or for any commercial purpose no longer occur.
11. “Meteorological monitoring station” means one of the following:
 - a. A Pima County Department of Environmental Quality meteorological monitoring station;
 - b. A station operated by the National Weather Service;
 - c. A Remote Automated Weather Station operated by the United States Forest Service, or United States Bureau of Land Management;
 - d. An Automated Weather Observing System or Automated Surface Observing System station, located at an airport, and either operated or certified by the Federal Aviation Administration; or
 - e. Any other meteorological equipment or wind instrument that is installed, calibrated, operated, and maintained by the owner or operator in accordance with the requirements for SLAMS/SPM (non-NCORE) instruments in *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements Version 2.0 (Final)*, publication number EPA-454/B-08-002, March 2008, and no future editions or amendments, and manufacturer's specifications, as applicable.
12. “Mineral tailings impoundment” means the earth-fill embankment dams used to store byproducts of prior mining operations that separated mineral ore from other unused material.
13. “Opacity” means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.
14. “Particulate matter” means any airborne finely divided solid or liquid material with an aerodynamic diameter smaller than one hundred micrometers.
15. “PM₁₀” means particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by a reference method contained within 40 C.F.R. Part 50, Appendix J or by an equivalent method designated in accordance with 40 C.F.R. Part 53, both sections adopted as of June 30, 2017 with no future editions or amendments.
16. “Slag storage area” means the area used to store copper smelter slag.
17. “Vegetative cover” means rooted vegetation or unattached vegetative debris lying on the surface that is not susceptible to movement by wind.

C. Control Measures.



ENVIRONMENTAL QUALITY

1. The owner or operator shall implement and maintain at least one of the following reasonably available control measures to reduce PM₁₀ emissions from the inactive mineral tailings impoundment to ensure compliance with subsection D.1 below:
 - a. Application of crushed rock or gravel;
 - b. Application of chemical or organic soil stabilizers;
 - c. Application of water;
 - d. Establishment of vegetative cover; or
 - e. Any other equivalent methods or techniques approved by the Department and EPA Region IX.
2. The owner or operator shall implement and maintain at least one of the following reasonably available control measures to reduce PM₁₀ emissions from the inactive slag storage area:
 - a. Application of a cap consisting of coarse copper smelter slag material; or
 - b. Any other equivalent methods or techniques approved by the Department and EPA Region IX.
3. To prevent trespass in the inactive mineral tailings impoundment and slag storage area, the owner or operator shall install and maintain the following:
 - a. No trespassing signs; and
 - b. Physical barriers such as fences, gates, posts, shrubs, trees, or other measures to effectively restrict access from the general public.

D. Opacity Standard.

1. The owner or operator shall not cause or allow visible emissions to exceed twenty percent opacity from the mineral tailings impoundment. Opacity shall be determined in accordance with subsection E.1 below.
2. The opacity standard in subsection D.1 above shall not apply during high wind events if the owner or operator has implemented and maintained reasonably available control measures required in subsections C.1 and C.3 above for the mineral tailings impoundment, as documented by subsection F.1.a below.

E. Monitoring.

1. To demonstrate compliance with subsections C.1 and D.1 above, the owner or operator shall conduct weekly visible emission observations of the mineral tailings impoundment.
 - a. All observations shall be conducted in accordance with 40 C.F.R. Part 60, Appendix A, Reference Method 9.
 - b. As an alternative to subsection E.1.a, the owner or operator may elect to conduct observation in accordance with ASTM D7520-16. If so, the owner or operator must have standard operating procedures in place to ensure that equipment is operated and maintained in accordance with manufacturer's specifications per Section 8.1 of ASTM D7520-16.



ENVIRONMENTAL QUALITY

2. To demonstrate compliance with subsection C.2 above, the owner or operator shall conduct monthly inspections of the slag storage area to assess the effectiveness of control measures. Inspection reports shall, at a minimum, include identification of inspector; inspection date and time; findings of inspection, and any corrective action or preventive measures to be taken.
3. To demonstrate compliance with subsection C.3 above, the owner or operator shall conduct monthly inspections of trespassing signs and physical constraints. Inspection reports shall, at a minimum, include identification of inspector; inspection date and time; findings of inspection, and any corrective action or preventive measures to be taken.

F. Recordkeeping.

1. The owner or operator shall maintain and make available to the Department or EPA Region IX the following records upon request:
 - a. Records of reasonably available control measures implemented and maintained as required by subsection C above;
 - b. Records of visible emission observations required by subsection E.1 above;
 - c. Records of inspections required by subsections E.2 and E.3 above;
 - d. Records of observer EPA Reference Method 9 or ASTM D7520-16 certifications;
 - e. Records of the owner or operator's installation, calibration, certification, operation, and maintenance of any meteorological equipment or wind instrument used for purposes of identifying high wind events; and
 - f. Records of meteorological monitoring station data used for purposes of identifying high wind events.
2. If the owner or operator elects to conduct weekly visual observations in accordance with subsection E.1.b, the following records shall be maintained:
 - a. ASTM D7520-16 certification documentation, data sheets, and all raw unaltered JPEGs used for opacity and certification determination, recorded in a form suitable and readily available for expeditious inspection and review.
 - b. Standard operating procedures used to ensure that equipment is operated and maintained in accordance with manufacturer's specifications per Section 8.1 of ASTM D7520-16.
3. All records required by this section shall be maintained by the owner or operator for a minimum of 5 years.

G. Notification.

1. The owner or operator shall provide written notification to the Department at least 30 days prior to initiating weekly visual observations in accordance with subsection E.1. The notification shall identify proposed observation points/locations and provide justification for the selection of those points/locations.
2. The owner or operator shall provide written notification to the Department at least 30 days prior to using any meteorological monitoring station as described in subsection B.11.e.

H. Reporting.

1. The owner or operator shall report to the Department any visible emissions in excess of opacity limit established by subsection D.1. The report shall be in two parts as specified below:
 - a. Notification by telephone or facsimile within 24 hours of the time the owner or operator first learned of the occurrence of excess opacity that includes all available information from subsection H.2.
 - b. Detailed written notification by submission of an excess opacity report within 72 hours of the notification under subsection H.1.a.
2. The excess opacity report shall contain the following information:
 - a. The approximate location at the mineral tailing impoundment where the excess opacity occurred;
 - b. The level of excess opacity as measured in accordance with subsection F;
 - c. The time and duration or expected duration of the excess opacity;
 - d. The nature and cause or suspected cause of the excess opacity;
 - e. The steps that were or are being taken to limit the excess opacity; and
 - f. Any corrective action or preventative measures taken.
3. In the case of continuous or recurring excess opacity events, the notification requirements of this subsection shall be satisfied if the owner or operator provides the required notification after excess opacity events are first detected and includes in the notification an estimate of the time the excess opacity events will continue. Excess opacity occurring after the estimated time period or changes in the nature of the excess opacity as originally reported shall require additional notification pursuant to subsections H.1 and H.2.

...

SIP Revision Public Hearing Sign-in Sheet

PLEASE SIGN IN

Pima County Department of Environmental Quality
 Proposed State Implementation Plan Revision Public Hearing
 Tuesday, January 29, 2019

Name	Mailing Address	E-Mail Address/Phone Number
Sarah Reitmeier - PDEQ	33 N Stone Ave, Suite 700 Tucson, AZ 85718	520-724-7437 Sarah.reitmeier@pima.gov
Rupesh Patel PDEQ	"	520 724-7341 rupesh.patel@pima.gov
Beth Gorman	33 N. Stone, Suite 700	724-7446 Beth.Gorman@Pima.gov
Mark Severson	4257 S STATION MASTER DR	262-0576 mseverson@bison-ang.com
Susanne Cotty	1 E. Broadway Blvd	scotty@pagregion.com

SIP Revision Public Hearing Transcript

PUBLIC HEARING
REGARDING
THE PROPOSED STATE IMPLEMENTATION
PLAN REVISION

Tuesday, January 29, 2019

Hearing Officer:

Today is Tuesday, January 28, 2019. The time is approximately 3:00 p.m. The location is the Joel D. Valdez Main Library, in Tucson, Arizona. I'm the Hearing Officer for today's proceedings representing the Pima County Department of Environmental Quality, or PDEQ. My name is Sarah Reitmeyer, Regulatory Program Manager and I'll be presiding at the hearing today. Other PDEQ representatives present are: Beth Gorman, PDEQ Public Outreach and Education Manager, and Rupesh Patel, Air Quality Program Manager.

At this moment, we are conducting a formal public hearing. As the designated air quality control district under state law, PDEQ is responsible for developing and administering air pollution controls that are to be incorporated into the State Implementation Plan or SIP. These controls are required under the federal Clean Air Act to maintain and protect the National Ambient Air Quality Standards. The purpose of this hearing is to allow the public the opportunity to enter into the record, oral or written comments regarding the proposed revision to the Pima County portion of the Arizona State Implementation Plan. Copies of the proposed revision were made available at the PDEQ office and on PDEQ's website.

By law, a public hearing must meet certain requirements. PDEQ is conducting this Public Hearing in accordance with state law and pursuant to 40 C.F.R. Part 51, Appendix V.

Public Hearing requirements are:

- 1) A thirty-day advance public notice must be given in two newspapers of general circulation. Notice was given on October 26, 2018 and January 4, 2019 in the Arizona Daily Star, the Daily Territorial, and the Ajo Copper News. Notice was also given on the Pima County homepage and on PDEQ's website.
- 2) The Public must be given an opportunity to speak or give written comments during the hearing. Today the public has the option to do so.
- 3) A hearing must be conducted "on the record" which means that it is recorded in some way. Today's meeting is being recorded.

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This hearing – is conduct – is considered a “formal public hearing” under state law. A formal public hearing is different from a public meeting or ‘open house’. In a public meeting, there is an opportunity for questions and answers between the general public and the department. As this is a formal public hearing today, the representatives of the department will not formally answer any questions. In other words, neither I, nor anyone from the department, will be answering questions today. PDEQ staff will be available for a short time after the hearing to clarify any questions about the revision to the Pima County portion of the Arizona SIP. At a later date, PDEQ will prepare a written response to all questions and comments entered into the record regarding the proposed revision to the Pima County portion of the Arizona SIP. If you have questions about the revision, please include them in your comments. All comments and questions should address the revision to the Pima County portion of the Arizona SIP only.

The agenda for today’s hearing is as follows: First, there will be a brief summary about the revision to the Pima County portion of the Arizona SIP, and then I’ll begin to call speakers in the order they are signed in, so as to begin taking public comment. As this is a very structured proceeding, please follow the instructions for making public comment. If you wish to comment, you must fill out a speaker slip that is available at the entrance and give it to Mrs. Beth Gorman. This procedure will allow everyone an opportunity to be heard and allow us to later match the name on the official record with the speaker on the recording. I will call individuals in the order that speaker slips were submitted. Please print your name to help ensure that we spell it correctly and it is in the record. We ask that comments be limited to three minutes so everyone who wishes to make a comment is given the opportunity to do so. You may also submit written comments today. Written comments shall be submitted to Mrs. Gorman. If you wish to do so, you may make both oral and written comments in the process.

Once again, the purpose of this hearing is to receive comment from the public on the proposed revision to the Pima County portion of the Arizona SIP. By law, all the comments made here, or in writing, are considered by PDEQ before making the final decision regarding the proposed revision. The department must evaluate, in writing, all comments, both written and verbal that are received. This document is known as a Response to Comments Summary. It will be available at the time the department makes a final decision regarding the proposed revision. If you wish to be notified of the decision made by the department, please be sure to sign the attendance sheet located at the entrance and indicate that you would like to be notified of the final revision to the Pima County portion of the Arizona SIP.

I will now give a brief summary of the revision to the Pima County portion of the Arizona State Implementation Plan.

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PDEQ is proposing a revision to the Pima County portion of the Arizona State Implementation Plan. The proposed revision to the SIP includes the following rule from Pima County Code Title 17, Section 17.16.125, titled Inactive Mineral Tailings Impoundment and Slag Storage Area within the Ajo PM₁₀ Planning Area. Pima County Code Section 17.16.125 is a new section that was adopted at the January 22, 2019, Pima County Board of Supervisors Hearing and will be effective February 21, 2019. Pursuant to Section 107(d)(4)(B) of the Clean Air Act, the U.S. Environmental Protection Agency, or EPA designated the Ajo PM₁₀ Planning Area in northwest Pima County as a “moderate” nonattainment area for the 1987 twenty-four-hour Particulate Matter National Ambient Air Quality Standards, specifically particulate matter with a diameter of ten micrometers or less, or PM₁₀. EPA based its designation on recorded violations of the standard at an ambient monitoring site within the County. The purpose of this SIP revision is to add a specific rule for the Ajo Planning Area to meet Clean Air Act requirements for an approved maintenance plan and have the area redesignated to attainment for the twenty-four-hour PM₁₀ National Ambient Air Quality Standards.

Specifically, Pima County Code 17.16.125 will provide permanence and enforceability for control measures that have already been implemented. Under this section, owners or operators are subject to implement and maintain required PM₁₀ control measures on applicable sources to meet visible emissions and stabilization requirements, in order to ensure continued particulate matter emissions reductions in the Ajo PM₁₀ Planning Area. The inactive tailings area must be controlled to 20% opacity for fugitive emissions on the property. For both the tailings and slag areas, owners or operators must also install and maintain signs and physical barriers to prevent trespass and redisturbance on the property.

This revision to the SIP will be submitted to the Arizona Department of Environmental Quality, or ADEQ, for incorporation into the Arizona SIP, and for submittal by ADEQ to the United States Environmental Protection Agency to demonstrate that all Clean Air Act requirements for redesignation of the Ajo PM₁₀ Planning Area to attainment have been satisfied. The clean air quality record, enforceable control measures, and projections of future emissions all show that the area will continue to maintain the PM₁₀ air quality standards through 2031. ADEQ will submit this SIP revision to the EPA to request that the EPA approve the maintenance plan and redesignate the Ajo nonattainment area to attainment for the twenty-four-hour PM₁₀ National Ambient Air Quality Standards.

This marks the end of the SIP revision summary. We will now begin taking formal comments. I would again like to remind people that if you wish to speak, please complete one of the speaker forms and hand them to Mrs. Gorman. I'll shortly begin calling up speakers to take public comment. To ease transcribing of the hearing, please speak clearly and into the recorder. Begin by giving your name so it can be entered into the record.

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Does anyone wish to speak?

Seeing no speakers coming forward, we will go off record and give time for others that may be on their way. The time is now 3:15 p.m.

-----**Going back on record**-----

The time is now 3:20 p.m. We are back on record and will proceed with the hearing.

-----**Closing the Hearing**-----

I would like to give a final opportunity for anyone to give comment.

Seeing that there are no comments, I would like to remind people that the department's Response to Comments document will be available and will be available in the near future (if comments are received). If you would like this document sent to you, please make sure that your name and address are clearly printed on the sign-in sheet so we can send these documents out to you. You may also leave your e-mail address and we can send them to you that way as well.

At this point, I will now close the hearing. Thank you for attending. The comment period for this proposed revision to the State – revision to the Pima County portion of the Arizona SIP ended November 28, 2019 at 5:00 p.m., however oral and written comments submitted today will be included in the documents regarding this SIP revision. Your interest is appreciated. Today's date is Tuesday, January 29, 2019, the time is 3:22 p.m.

This public hearing is now adjourned.

**SIP Revision
Public Hearing
Presiding Officer Certification**



PIMA COUNTY

ENVIRONMENTAL QUALITY

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Director

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Public Hearing Presiding Officer Certification

I, Sarah Reitmeyer, the designated Presiding Officer, do hereby certify that the public hearing held by the Pima County Department of Environmental Quality (PDEQ) was conducted on January 29, 2019 at the Joel D. Valdez Main Library located at 101 N Stone Avenue in Tucson, AZ, in accordance with public notice requirements by publication in the Arizona Daily Star, the Daily Territorial, and the Ajo Copper News, as well as the PDEQ website beginning on October 26, 2018 and on January 4, 2019. Furthermore, I do hereby certify that the public hearing was recorded from the opening of the public record through the concluding remarks and adjournment, and the transcript provided contains a full, true, and correct record of the above referenced public hearing.

Dated this 29th day of January, 2019.

Sarah L. Reitmeyer

Sarah L. Reitmeyer
Regulatory Program Manger

State of Arizona)
) ss.
County of Pima)

Subscribed and sworn to before me on this 29 day of January, 2019.

Barbara Denny

Notary Public

My commission expires: May 10, 2019

