



ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION

**RESPONSIVENESS SUMMARY
TO
PUBLIC COMMENTS AND QUESTIONS**

**Copper World, Inc. – Copper World Project
Permit No. 96659**

**Public Comment Period: July 15, 2024 to September 15, 2024
Public Hearing: September 10, 2024**

January 2, 2025

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List of Abbreviations

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
A.R.S.	Arizona Revised Statutes
AP-42	Compilation of Air Pollutant Emission Factors
APP	Aquifer Protection Permit
AZPDES	Arizona Pollutant Discharge Elimination System
CAA	Clean Air Act
CEMS	Continuous Emissions Monitoring Systems
CFR	Code of Federal Regulations
CO	Carbon Monoxide
EPA	Environmental Protection Agency
HAP	Hazardous Air Pollutant
ISD	Integrated Surface Database
mph	Miles Per Hour
MSGP	Multisector General Permit
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NO ₂	Nitrogen Dioxide
NSPS	New Source Performance Standards
NSR	New Source Review
NWS	National Weather Service
O ₃	Ozone
PDEQ	Pima Department of Environmental Quality
PM	Particulate Matter
P.C.C.	Pima County Code
PM ₁₀	Particulate Matter with aerodynamic diameter less than 10 Microns
PM _{2.5}	Particulate Matter with aerodynamic diameter less than 2.5 Microns
RACT	Reasonably Available Control Technology
SO ₂	Sulfur Dioxide
tpy	Tons Per Year
TSF	Tailings Storage Facility
TSD	Technical Support Document
µg/m ³	Micrograms per Cubic Meter

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I. BACKGROUND

This document contains Arizona Department of Environmental Quality's (ADEQ or "the Department") responses to all significant comments received on proposed Air Quality Permit No. 96659 for Copper World, Inc. located in Pima County. The Copper World Project is an open-pit mine and ore processing facility located at 9025 East Santa Rita Road, Sahuarita, Pima County, AZ. ADEQ accepted comments on the Draft Permit and technical support document (TSD) from July 15, 2024 to September 15, 2024. The Department held a public hearing on September 10, 2024 at Corona Foothills Middle School from 6:00 p.m. to 8:30 p.m.

The Department received comments on the draft permit from approximately 2,475 individuals during the public comment period or at the public hearing. Of the total submitted comments, the Department generated 134 responses. Table 10 below lists the commenters for the air quality permit for the Copper World Project by alphabetical order of first name.

The Department has grouped the comments into subject areas that focus on different aspects of the proposed draft permit. While the Department has made every effort to group the significant comments into subject areas, some comments may overlap multiple subject areas, therefore, ADEQ encourages the public to read the entire responsiveness summary. For some comments, the Department has included direct quotes of the comments extracted from the original letter or public hearing transcript. However, ADEQ has made the best effort to paraphrase or shorten many of the comments received to ensure clarity and conciseness. In some cases, the same or similar comments were submitted by multiple commenters. Instead of duplicating each of the comments and responses, ADEQ has listed the comment only once. The Department's response to each comment can be found directly below each comment.

II. ADEQ RECOMMENDATION

ADEQ hereby issues Air Quality Permit No. 96659 to Copper World, Inc. for the construction and operation of the Copper World Project located at 9025 East Santa Rita Road, Sahuarita, AZ in Pima County. The air quality permit for the Copper World Project identifies the applicable rules from the Arizona Administrative Code (A.A.C.), Pima County Code (P.C.C.), and the Code of Federal Regulations (CFR) governing emissions from the facility and establishes practically enforceable limitations. The Department considered all comments received during the public comment period into the decision to issue the air quality permit. Any changes made to the air quality permit that occurred as a result of a comment received can be found in Section IV below. The permit establishes appropriate compliance procedures, including requirements for emissions testing, continuous emission monitoring, recordkeeping, and reporting for the Copper World Project. Copper World, Inc. will be required to carry out these procedures on an ongoing basis in order to demonstrate that the Copper World Project is operated within the limitations established by the air quality permit and that emissions are properly controlled.

The permit related documents can be found at the ADEQ website address:

<https://azdeq.gov/aqd/copperworld>

III. COMMENTS AND QUESTIONS

A. ACID RAIN

Comment 1: The commenter expressed concern regarding the potential for acid rain resulting from the operation of the Copper World Project.

ADEQ Response:

The Department does not anticipate that acid rain is a concern related to the Copper World Project, as it is not a significant source of sulfur dioxide emissions.

B. ADEQ PERMITTING PROCESS AND PUBLIC PARTICIPATION

Comment 2: Several commenters stated that the Arizona Department of Environmental Quality is violating its mission to protect and enhance public health and the environment in Arizona by issuing the air quality permit for the Copper World Project.

ADEQ Response:

The Department disagrees that the issuance of the air quality permit for the Copper World Project violates its mission to protect and enhance public health and the environment.

The Air Quality Permitting Program at the Arizona Department of Environmental Quality has two main roles in protecting and enhancing public health and the environment in Arizona: (1) to ensure that the operation of new stationary sources and modifications to existing stationary sources does not result in concentrations of pollutants in areas accessible to the public that exceed the National Ambient Air Quality Standards (NAAQS), which are health-based air quality standards for certain pollutants that are developed by the Environmental Protection Agency (EPA) to be protective of sensitive populations, including children, the elderly, and populations with respiratory diseases; and (2) to ensure that all stationary sources are in compliance with all local, state, and federal air quality regulations applicable to the source.

In the context of the Copper World Project, the Department required that Copper World, Inc. utilize air dispersion modeling to develop an ambient air impact analysis demonstrating that the emissions resulting from the operation of the Copper World Project would not interfere with the National Ambient Air Quality Standards for particulate matter with aerodynamic diameter less than 10 microns (PM₁₀), particulate matter with aerodynamic diameter less than 2.5 microns (PM_{2.5}), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and ozone (O₃) in areas accessible to the public in accordance with the Arizona Minor New Source Review (NSR) Program and A.A.C. R18-2-334.C.2. The Department also developed an

air quality permit containing all applicable local, state, and federal air quality regulations, in addition to enforceable emissions standards, operating requirements, and compliance demonstration procedures implemented to ensure that the Copper World Project is operated consistent with the operations presented in the ambient air impact analysis.

Through the Department's review of the ambient air impact analysis developed to support the Copper World Project and the development of a legally-enforceable air quality permit containing all applicable air quality regulations, the Department has satisfied its mission to protect and enhance public health and the environment.

Comment 3: The commenter states that the Department has violated Arizona Revised Statutes (A.R.S.) § 36-495, 13-2702, and 13-2907.01 by proposing issuance of the air quality permit for the Copper World Project.

ADEQ Response:

The Department disagrees with the assertion that the Department has violated state law by issuing the air quality permit for the Copper World Project. To address the specific statutes that were referenced by the commenter:

A.R.S. § 36-495 is under Title 36 – Public Health and Safety, Chapter 4.3 – Environmental Laboratories. A.R.S. § 35-495 discusses definitions for compliance testing conducted by environmental laboratories. It is unclear how this statute would apply to issuance of the air quality permit by the Department.

A.R.S. § 13-2702 and A.R.S. § 13-2907.01 are covered under Title 13 – Criminal Code. A.R.S. § 13-2702 applies to perjury under Criminal Code, while A.R.S. § 13-2907.01 applies to false reporting to law enforcement agencies. It is unclear how these statutes would apply to issuance of the Air Pollution Control Permit for the Copper World Project by the Department.

Comment 4: Several commenters stated that the community meeting and public hearing for the Copper World Project should have been held in the Greater Tucson area rather than at the Corona Foothills Middle School.

ADEQ Response:

The Department held the community meeting and public hearing at the Corona Foothills Middle School in order to be in close proximity to the Copper World Project and the neighboring communities that have expressed interest in the Copper World Project throughout the permitting process. The Department provided sufficient notice for both the community meeting and public hearing to ensure that interested community members would be able to attend the meetings, and made all

materials from the community meeting available on the AZDEQ website for review by community members that were not able to attend. The Department stands by its community engagement strategy to schedule these meetings within close proximity to the Copper World Project and the nearby communities.

- Comment 5: Several commenters requested that the Department conduct an additional community meeting and public hearing for the Copper World Project in the Greater Tucson Area, in addition to requests for televising and livestreaming each of the events.

ADEQ Response:

The Department held the community meeting and public hearing at the Corona Foothills Middle School due to the proximity of the Copper World Project to the school and residential communities. The meetings were well-publicized, with notice being provided 30-days in advance of the community meeting, in addition to copies of the fact sheet and presentation slides from the community meeting being made available on the Permits of Interest page for the Copper World Project on the AZDEQ website shortly following the meeting. The Department is also aware that the community meeting was livestreamed, and this livestream was uploaded to YouTube for additional viewing.

The Department also notes that the public hearing is intended to provide an additional opportunity to submit formal comments to the Department, and the “weight” of comments does not change depending on the method that the comment is submitted or the volume of similar comments received. As such, the Department decided not to conduct additional community meetings or public hearings for the Copper World Project in the Greater Tucson Area.

- Comment 6: The commenter expressed concern that the Department intentionally scheduled the public hearing for the Copper World Project during the presidential debate in order to suppress attendance.

ADEQ Response:

The Department acknowledges concerns that attendance to the public hearing held for the Copper World Project air quality permit may have been impacted by the presidential debate occurring concurrently. However, the Department would like to reiterate that while the public hearing is intended to be an additional opportunity to provide formal comments on the proposed air quality permit, the quantity of similar comments and the method by which the comment is submitted does not impact the Department’s evaluation of the content of those comments.

Comment 7: The commenter stated that the Department clearly intended to issue the air quality permit for the Copper World Project, and that the public participation process was just to fulfill the Department's legal obligation.

ADEQ Response:

The Department disagrees with the assertion that the public participation period was simply to fulfill the Department's legal obligation to notify the public of proposed permitting actions.

It is important to note that the Department commences the public participation period once the Department has completed technical review of the permit application and drafting of the air pollution control permit and technical support document. At that time, the Department is proposing the air quality permit for issuance because the Department has determined that the applicant has satisfied the applicable legal requirements under Title 49 of the A.R.S. and Title 18, Chapter 2 of the A.A.C. The public participation period is an opportunity for interested community members to review the proposed permit and supporting documentation to provide valuable input on the contents of permit application and the Department's development of the proposed permit and technical support document.

While comments received during the public participation period may not result in the Department's denial of the permit application in question, as many commenters may intend, it often results in impactful changes to the permit, including, but not limited to: the adoption of more stringent monitoring, recordkeeping, and reporting requirements; removal of inappropriate or inapplicable permit requirements; and clarification to existing permit requirements. The Department views this as an extremely valuable opportunity for the public to identify any gaps in the Department's development of the permit documents, present questions that may not have been identified during the Department's review of the permit application, and ultimately develop a stronger, more protective air pollution control permit. ADEQ has listed the significant permit changes in Section IV that were a direct result of public comments received

The Department took various measures to ensure that the public was effectively informed during the permitting process, including the development of a Permits of Interest page following receipt of the initial application; frequent updates the Permits of Interest page with new information as it was requested and subsequently received by the Department, conducting a community meeting in close proximity to the Copper World Project, which included a technical presentation and informal opportunity to ask agency staff questions regarding the Copper World Project, and providing an extended public participation period of 60 days to further ensure that public input was maximized. The Department notes that many of these measures exceeded the Department's legal requirements and typical permitting practices, and were taken in an effort to engage with the community.

Comment 8: The commenter requested that the Department compare technical details between the permit applications submitted to the Department for the aquifer protection permit and air quality permit to ensure alignment, and incorporate changes into the air quality permit and air dispersion model, as appropriate.

ADEQ Response:

The Department required that the ambient air impact analysis conducted by Copper World, Inc. be developed in order to evaluate the worst-case impacts of air pollutants from the Copper World Project. By requiring Copper World, Inc. to perform the air dispersion modeling analysis addressing both the maximum operating rate of ore processing operations and maximum out-of-pit hauling rate, the Department has verified that worst-case impacts from the Copper World Project will not interfere with attainment of the National Ambient Air Quality Standards in areas accessible to the public. After review, the Department does not anticipate that minor technical differences between the Air Quality Permit application and Aquifer Protection Permit application will result in the changes to the ambient air impact analysis that would result in the Copper World Project interfering with attainment of the National Ambient Air Quality Standards.

Comment 9: The commenter stated that the fugitive dust control plan and tailings dust management plans required by the permit were not made available during the public participation period.

ADEQ Response:

The fugitive dust control plan and tailings management plan submitted by Copper World, Inc. for the Copper World Project had been made available on the Permits of Interest webpage on the AZDEQ website prior to the commencement of the public participation period, and remain available for review at this time. The Permits of Interest webpage was also directly referenced in the public notice webpage for the Copper World Project.

C. AFFIRMATIVE DEFENSE AND EMERGENCY PROVISIONS

Comment 10: The commenter states that the Affirmative Defenses provided for Emergency Provisions under A.A.C. R18-2-306.E and Startup, Shutdown, and Malfunction under A.A.C. R18-2-310 are no longer applicable requirements under the Title V Permitting Program and must be removed from the permit.

ADEQ Response:

The Department agrees to remove the Affirmative Defense related to Emergency Provision (Condition XII.C of Attachment “A”) and

Malfunction, Startup, and Shutdown (Conditions XII.D of Attachment “A”) from Air Quality Permit No. 96659 for the Copper World Project.

The Department notes that Affirmative Defense Provisions for Startup, Shutdown, and Malfunction may remain available as “state-enforceable only” in the case of non-federally enforceable emissions limitations. It is notable that Affirmative Defense is not available for federally enforceable emissions limitations, including voluntary emissions limitations adopted to avoid classification as a Class I source.

D. AIR DISPERSION MODEL

Comment 11: The commenter states that PM10 monitoring data from the Corona de Tucson PM10 monitor was inappropriately determined to be exceptional events and should not have been excluded from the associated background concentration.

ADEQ Response:

ADEQ acknowledges that the excluded events in the Copper World Project modeling report do not qualify as exceptional events within the scope of the 2016 Exceptional Events Rule because the data does not have regulatory significance, i.e., is not being used to demonstrate attainment, assignment or reassignment, extension for attainment, or other demonstration specifically delineated under the scope of the Exceptional Events Rule. However, On April 4, 2019, EPA issued a memorandum titled “Additional Methods, Determinations, and Analyses to Modify Air Quality Data Beyond Exceptional Events”.¹

The memorandum states:

“EPA recognizes there are determinations and analyses not covered by the Exceptional Events Rule ...that also rely on ambient air quality monitoring data that may have been influenced by **atypical, extreme, or unrepresentative events.**”

The memorandum further identifies other determinations, actions, and analyses that are not covered by the scope of the Exceptional Events Rule, but for which the exclusion, selection, or adjustment of monitoring data may be appropriate and allowable under other sections of the Clean Air Act (CAA) and EPA rules or guidance. One such situation where an agency is permitted to exclude data without invoking the Exceptional Events Rule process, is under “Certain Modeling Analyses under EPA’s

¹U.S. EPA. 2019. Additional Methods, Determinations, and Analyses to Modify Air Quality Data Beyond Exceptional Events.

https://www.epa.gov/sites/default/files/2019-04/documents/clarification_memo_on_data_modification_methods.pdf

Guideline on Air Quality Models”. Specifically, the Department may exclude data if:

“Ambient data are not representative to characterize background concentrations or base period concentration in accordance with the Guideline, which may impact a determinative value in a past or projected time period. Situations could include removal of air quality monitoring data that apply to characterizing background contributions for NAAQS compliance demonstrations under PSD...”

The memo is consistent with Appendix W to 40 CFR Part 51 Section 8.3 – Background Concentrations, in which EPA identifies “circumstances which would necessitate modifications to the ambient data record”. EPA states that “such cases could include removal of data from specific days or hours when a monitor is being impacted by activities that are **not typical...**”²

While the 2019 memorandum and Appendix W to 40 CFR Part 51 specifically discuss air dispersion modeling for major sources regulated under the Prevention of Significant Deterioration (PSD) program, the guidance can be extended to the ADEQ’s Minor New Source Review program. As part of the Department’s Minor New Source Review program, codified at A.A.C. R18-2-334, Copper World, Inc. is required to demonstrate that the emissions from the Copper World Project will not cause or contribute to a NAAQS violation. The minor NSR demonstration is conducted using procedures set forth in Appendix W to 40 CFR Part 51, as required by A.A.C. R18-2-334.H.

Comment 12: The commenter states that analysis was not provided suggesting that the PM10 monitoring data values excluded from the associated background concentration were a result of wind speeds outside of the range of natural variability for the area, and therefore the removal of these dates was inappropriate.

ADEQ Response:

As discussed in the modeling report and Technical Supporting Document, Copper World, Inc. selected the Corona de Tucson monitor to establish the background concentration for PM10 for the assessment of impacts from the Copper World Project. This monitor is located approximately 13-kilometers from the Copper World Project’s northern boundary, and was chosen for determining background concentrations due to its proximity and designation as a “regional scale” monitor. Although the monitor could be impacted by nearby or unidentified anthropogenic sources from Tucson

²U.S. EPA. 2024. Guideline on Air Quality Models (Appendix W to 40 CFR Part 51). https://www.epa.gov/system/files/documents/2024-11/appendix_w-2024.pdf Section 8.3.2.

due to the transport of pollutants, Pima County air pollution control regulations include requirements for the reasonable control of anthropogenic sources of fugitive dust. As such, it is not unreasonable to conclude that occasional elevated PM10 concentrations at this monitor are generally attributable to natural sources.

In the modeling report, Copper World, Inc. demonstrated that the PM10 levels at the Corona de Tucson monitor were significantly higher on the seven dates than what is normal for the monitor. Additionally, Copper World, Inc. had demonstrated that, on each date, high wind gusts occurred within the Tucson region as a result of either synoptic frontal passages or outflow gusts associated with convective storms. Although high wind events reoccur, they remain rare and occur outside of the typical daily or monthly weather variability.

While reviewing the submittal from Copper World, Inc.'s modeling report, the Department conducted supplemental analyses to further ensure that these dates were atypical and appropriate for exclusion. These analyses are summarized below:

(1) 24-Hour Average PM10 Concentrations

The 24-hour average PM10 concentrations for the Corona de Tucson monitor from 2019 through 2021 are shown in Figure 1 below. The 50th and 95th percentile of the 24-hour average concentrations over three years are 13 $\mu\text{g}/\text{m}^3$ and 28 $\mu\text{g}/\text{m}^3$, respectively. The seven dates removed include 24-hour average PM10 concentrations ranging from 52 $\mu\text{g}/\text{m}^3$ to 64 $\mu\text{g}/\text{m}^3$, which are nearly double the 95th percentile value. These values represent outliers, and do not reflect typical ambient air quality conditions in the area where the monitor is located, as further demonstrated in Figure 2 below.

Figure 1: Corona de Tucson 24-Hour Average PM10 Concentrations (2019 through 2021)

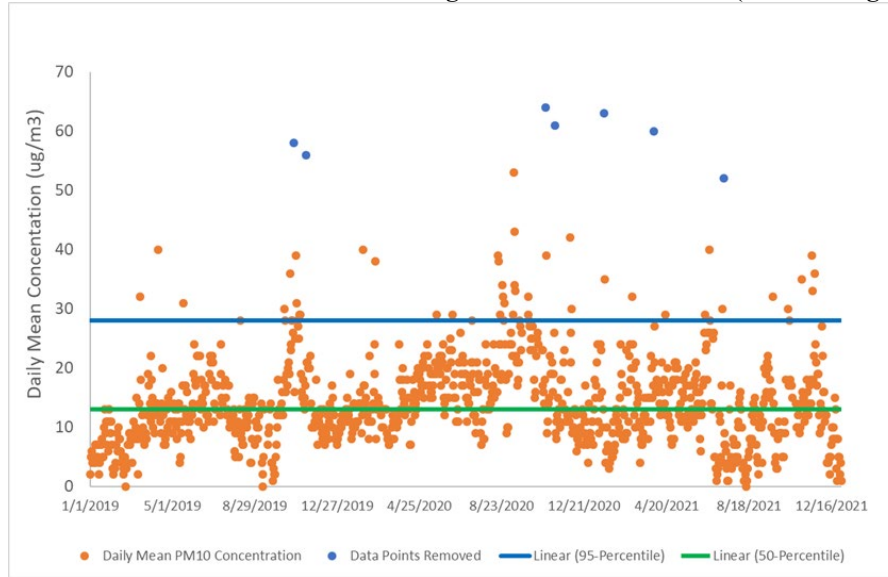
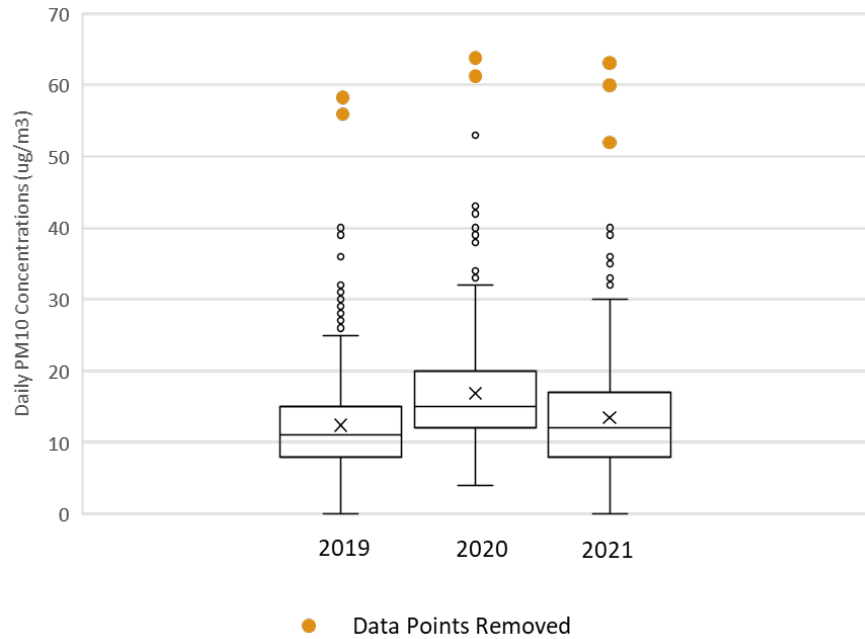


Figure 2: Corona de Tucson 24-Hour Average PM10 Concentrations



(2) Hourly PM10 Concentrations

Figures 3 through 9 below show the hourly average monitoring concentrations for each of the seven removed dates. For comparison purposes, the Department also calculated the 95th and 50th percentiles of hourly average concentrations for each diurnal hour during the month in which the removed date occurs, based on the data from 2019 to 2021.

Figure 3: Hourly PM10 Concentrations (January 19, 2021)

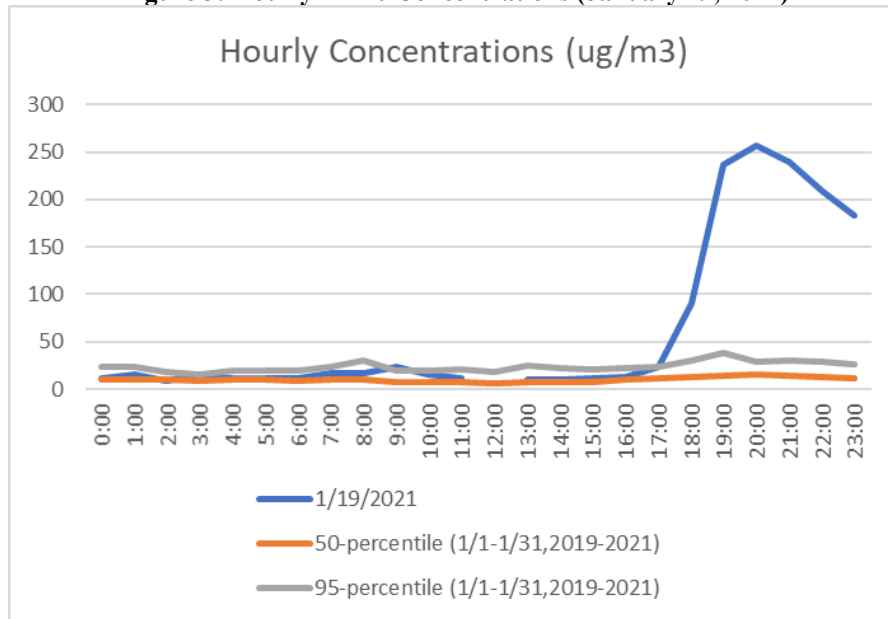


Figure 4: Hourly PM10 Concentrations (April 1, 2021)

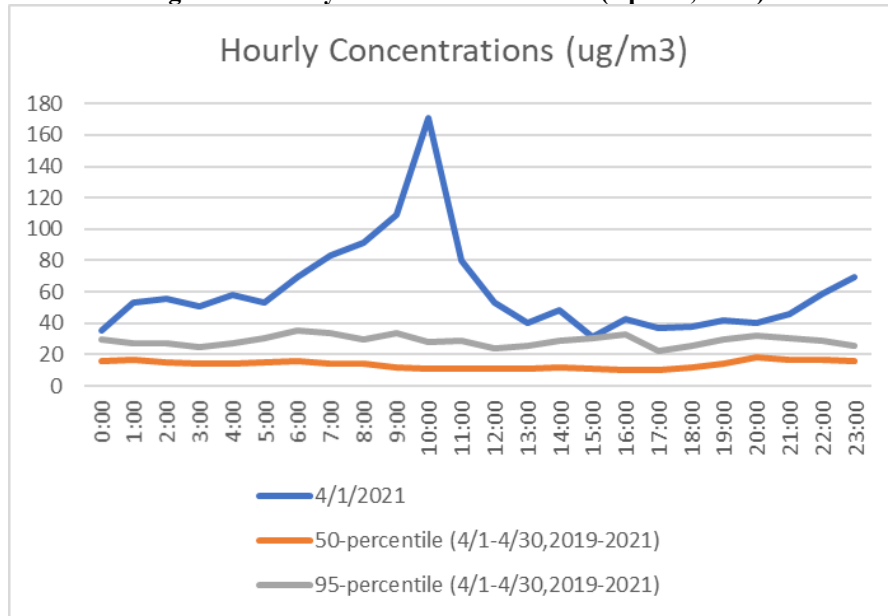


Figure 5: Hourly PM10 Concentrations (July 12, 2021)

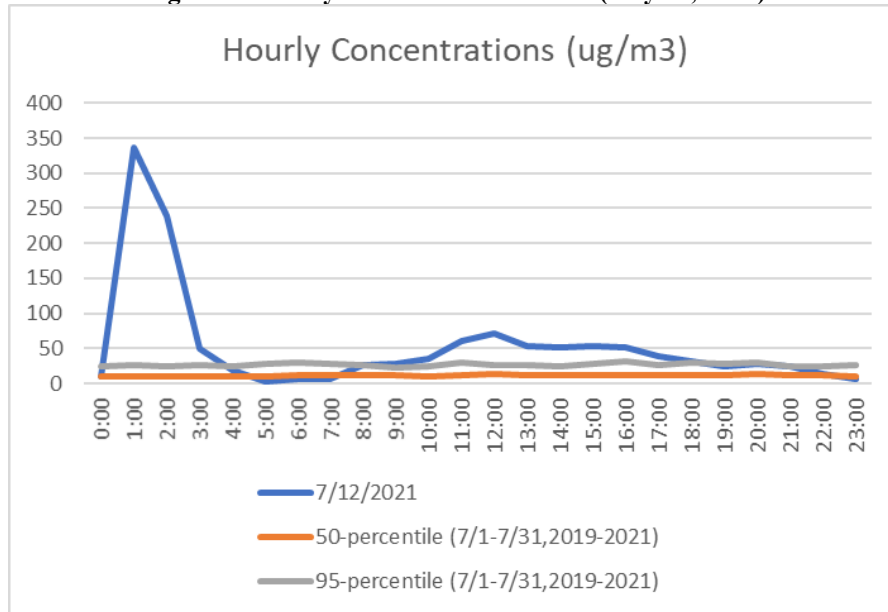


Figure 6: Hourly PM10 Concentrations (October 26, 2020)

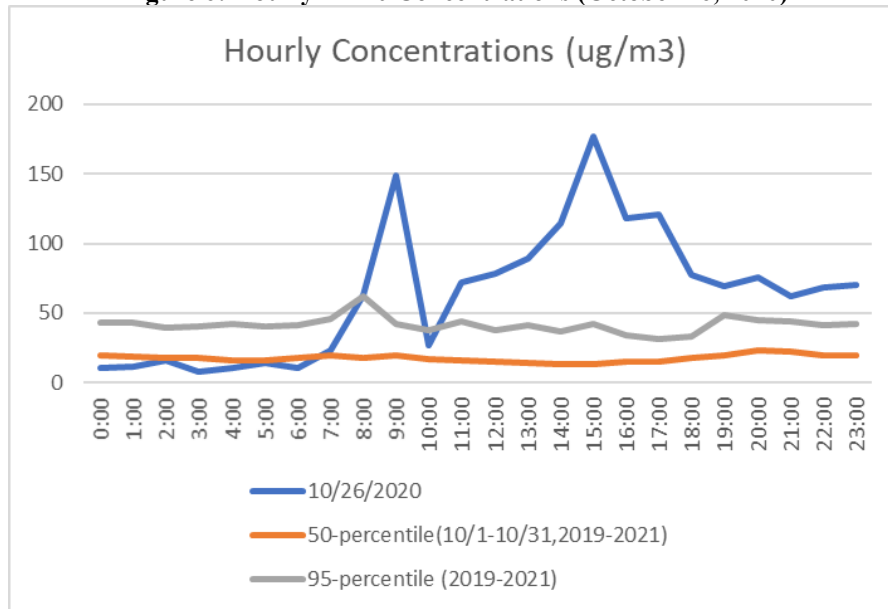


Figure 7: Hourly PM10 Concentration (November 8, 2020)

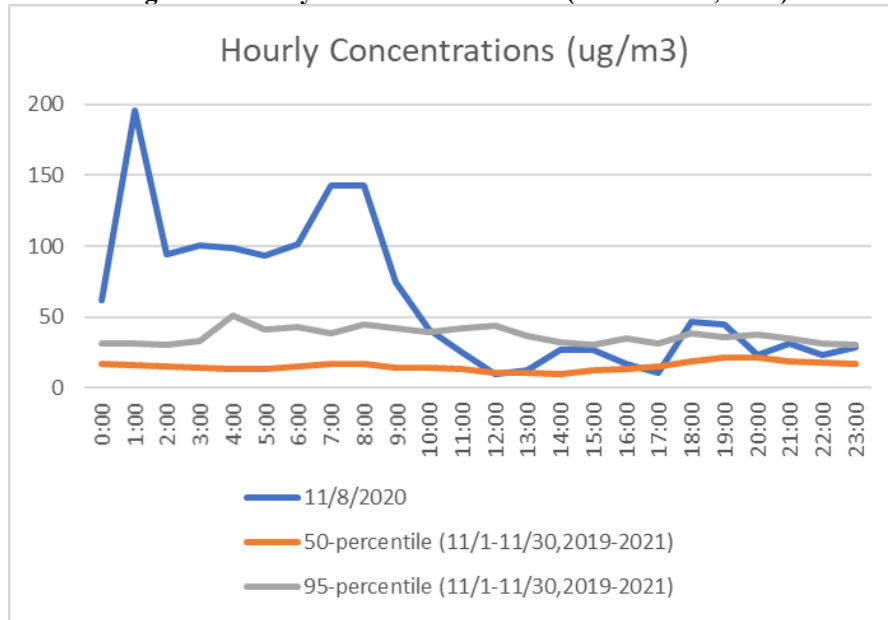


Figure 8: Hourly PM10 Concentrations (October 25, 2019)

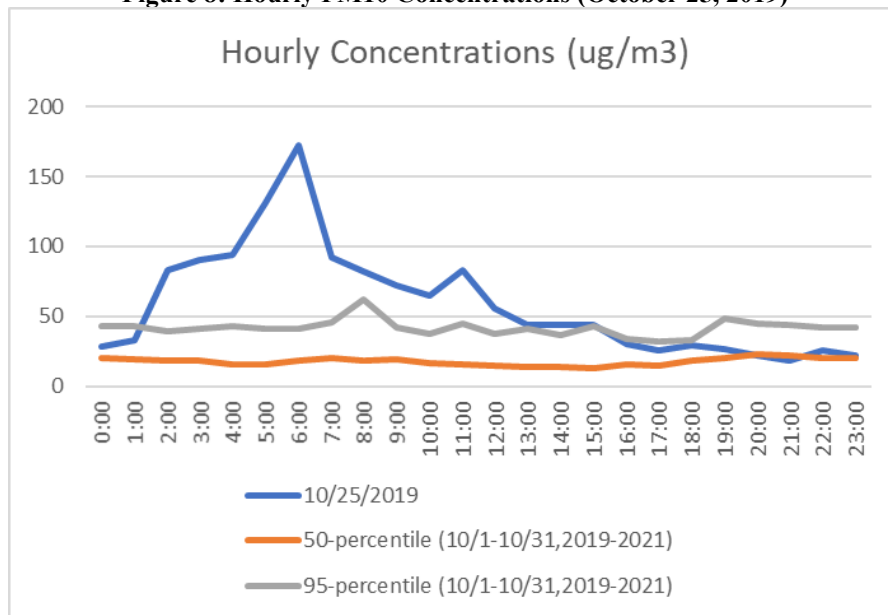
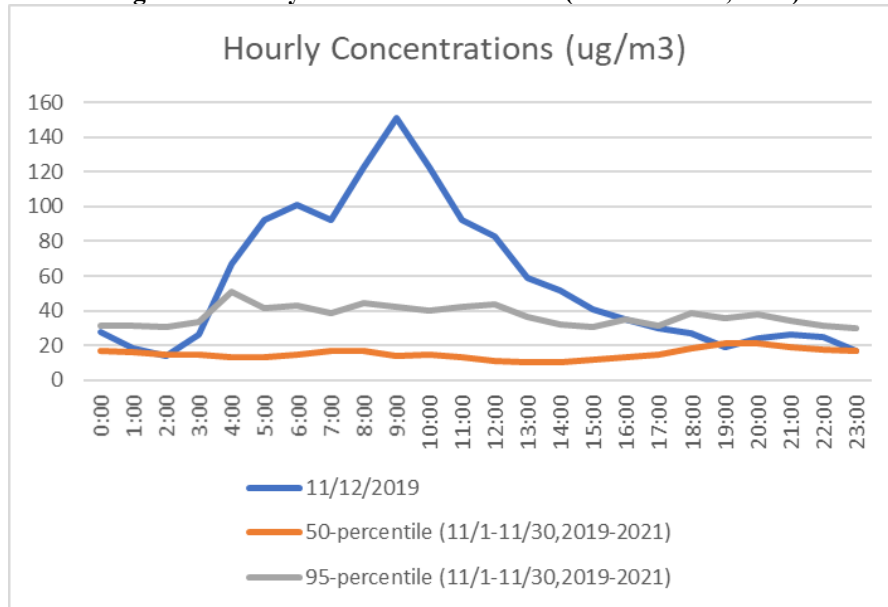


Figure 9: Hourly PM10 Concentrations (November 12, 2019)



As shown above, significant spikes in hourly monitoring concentrations were observed on each date, with peak hourly concentrations for all dates exceeding 150 $\mu\text{g}/\text{m}^3$. Comparatively, the 95th and 50th percentile of hourly concentrations for these peak hours were generally below 50 $\mu\text{g}/\text{m}^3$ and 20 $\mu\text{g}/\text{m}^3$, respectively. The significant disparity between the observations for these specific dates and the calculated percentiles indicates that the elevated concentrations on the removed dates are atypical and are not reflective of typical ambient air quality conditions in the area that Corona de Tucson monitor is located.

(3) Wind Speeds

The Department reviewed the wind speed data collected from the Tucson International Airport, which is located approximately 20-kilometers from the Corona de Tucson monitor. The Tucson International Airport meteorological data represents the most robust dataset available for Tucson and the surrounding areas.

To determine if an event qualifies as a high wind dust event, a high wind threshold must be specified. As specified in the 2016 Exceptional Events Rule, EPA will accept a sustained wind of 25 miles per hour (mph) as a high wind threshold for certain areas in the western United States.³ The threshold of 25 mph is also cited in the EPA memorandum titled “Guidance on the Preparation of Demonstrations in Support of Requests to Exclude Ambient Air

³ 81 Fed. Reg. at 68257.

Quality Data Influenced by High Wind Dust Events Under the 2016 Exceptional Events Rule.”⁴ While the EPA considers events with sustained winds above or below the high wind threshold, more in-depth analyses may be required for high wind dust events with sustained winds less than the high wind threshold. Additionally, the EPA evaluates sustained wind speeds based on shorter averaging times (such as 1 to 5 minutes) on a case-by-case basis.

As previously discussed, the events excluded for the background concentration determination for the Copper World Project do not qualify as exceptional events under the 2016 Exceptional Events Rule. However, the Department has determined that it is appropriate to apply the high wind threshold of 25 mph for the background concentration determination analysis to identify atypical conditions. This threshold is based on extensive windblown dust emissions research performed in Nevada, which the Department considers to be applicable to Arizona as well. Analysis of wind speed data from Tucson International Airport for 2019 through 2021 shows that only 0.27% of sustained winds reach or exceed 25 mph. Therefore, an event with a sustained wind speed of 25 mph or higher is considered atypical in this area.

ADEQ performed an initial analysis using the high wind threshold of 25 mph. For events with sustained winds below this threshold, ADEQ conducted additional analyses considering all relevant evidence using a weight-of-evidence approach. Wind speed data for this analysis was obtained from the University of Utah MesoWest system.⁵ Figures 10 through 16 below present sustained winds and wind gusts for the seven dates analyzed:

⁴ U.S. EPA. 2019. Guidance on the Preparation of Demonstrations in Support of Requests to Exclude Ambient Air Quality Data Influenced by High Wind Dust Events Under the 2016 Exceptional Events Rule.

https://www.epa.gov/sites/default/files/2019-04/documents/high_wind_dust_event_guidance.pdf

⁵ <https://mesowest.utah.edu/>

Figure 10: Wind Speed (January 19, 2021)

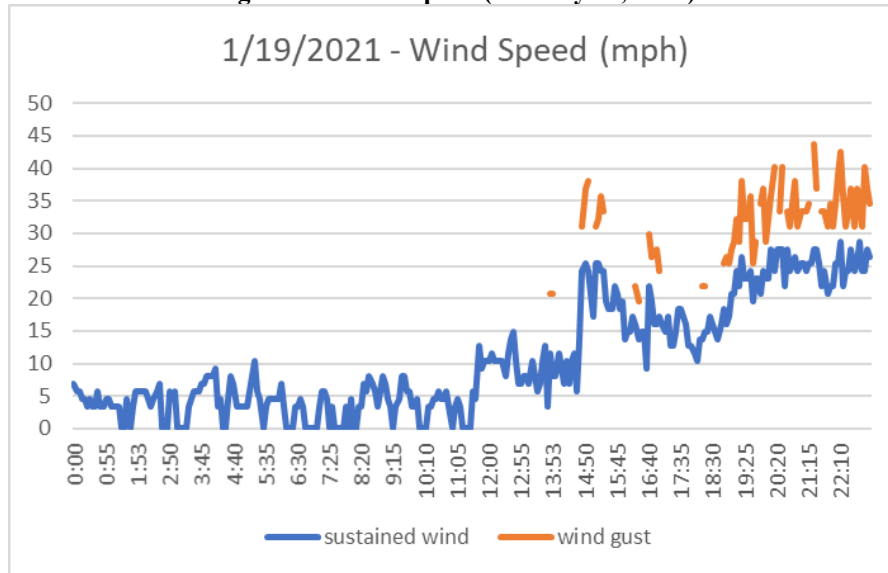


Figure 11: Wind Speed (April 1, 2021)

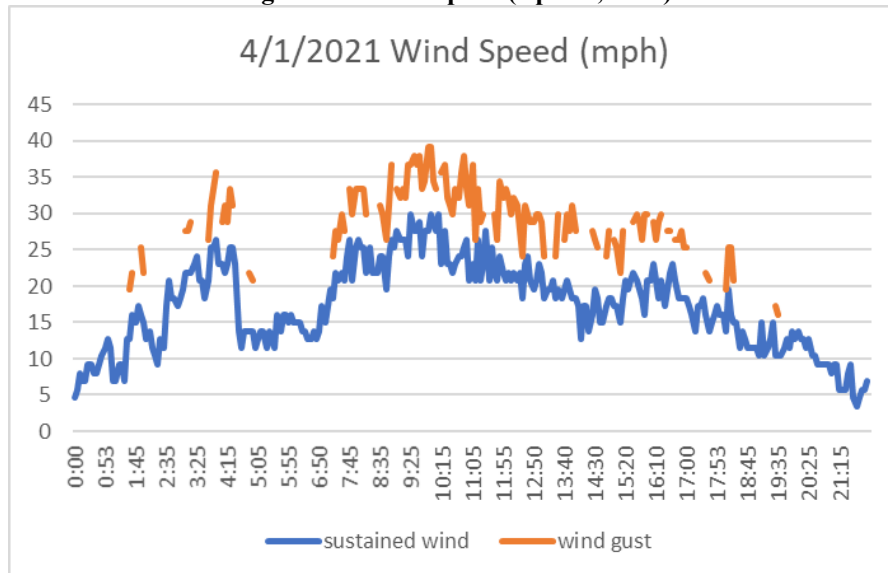


Figure 12: Wind Speed (July 12, 2021)

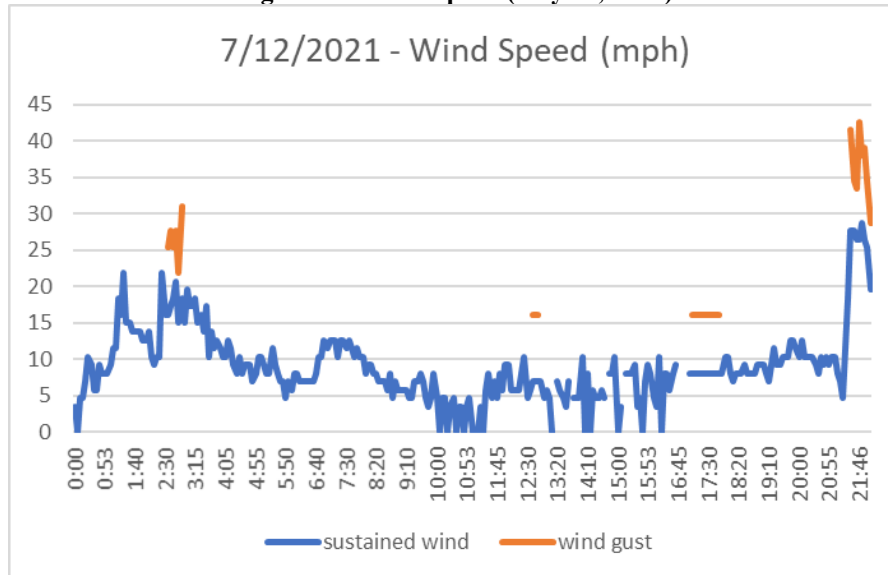


Figure 13: Wind Speed (November 7 to November 8, 2020)

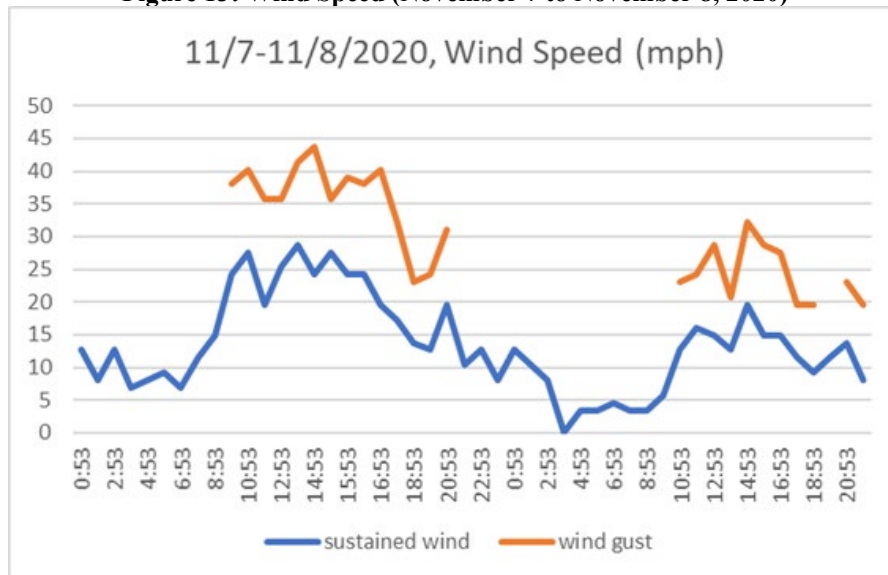


Figure 14: Wind Speeds (October 26, 2020)

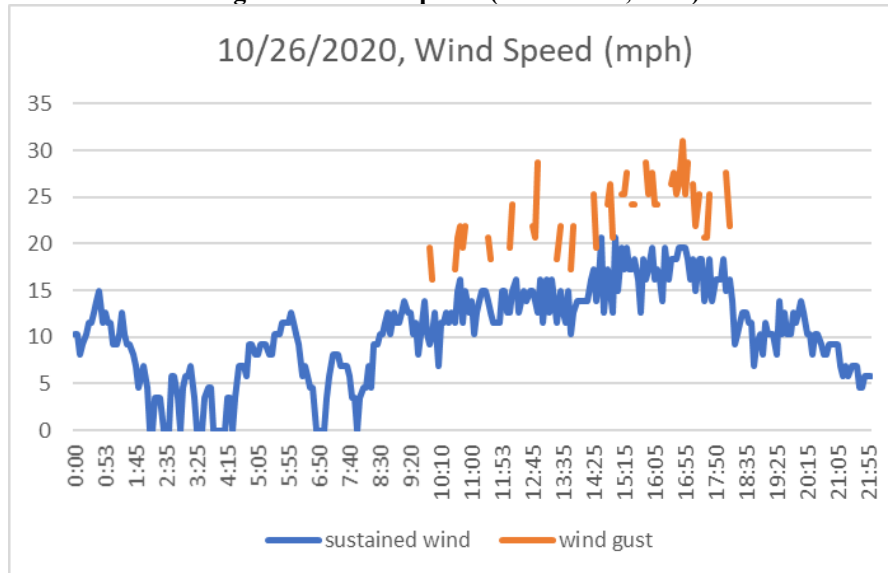


Figure 15: Wind Speeds (October 25, 2019)

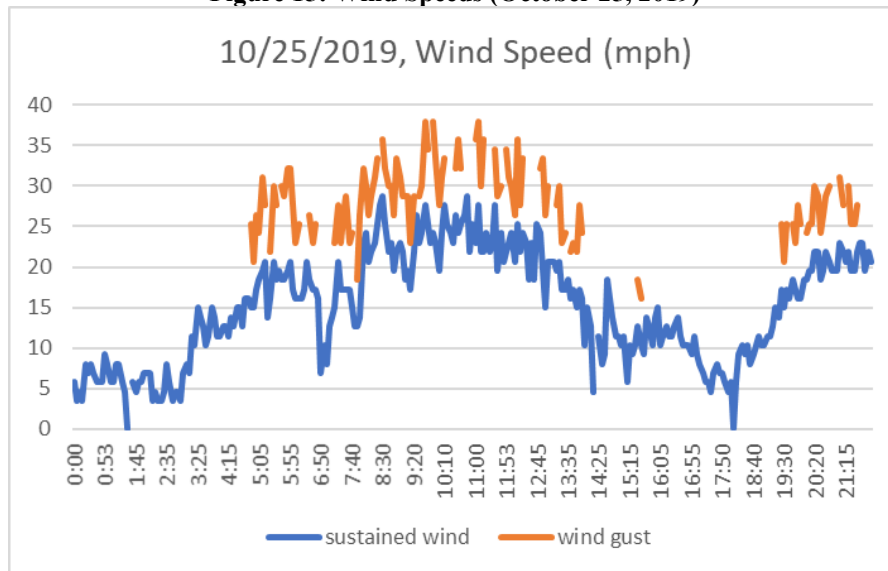
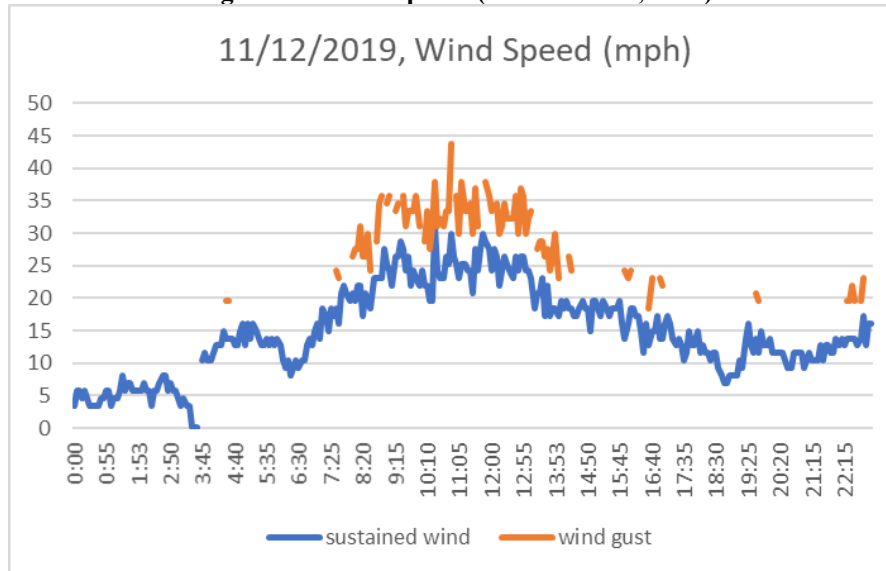


Figure 16: Wind Speeds (November 12, 2019)



Among these dates, five dates (July 12, 2021; April 1, 2021; January 19, 2021; November 12, 2019; and October 25, 2019) recorded maximum sustained winds of 30 mph or higher, with gusts ranging from 40 mph to 49 mph. For the two remaining dates (November 8, 2020 and October 26, 2020), sustained winds were evaluated to be below 25 mph (ranging from 22 to 23 mph). As such, these dates required further investigation, described below:

(a) November 8, 2020

Unlike the other six dates, which have data recorded every 1 to 5 minutes, this date has data recorded every hour. ADEQ identified missing 1-minute and 5-minute wind data from the Tucson Airport station from November 7, 2020 to November 8, 2020. The reported wind speeds from MesoWest for these two dates were found to align closely to the hourly average wind speeds reported in the Integrated Surface Database (ISD). Therefore, it is very likely that the reported wind speeds as shown in the above figure may underestimate the sustained winds on shorter averaging times (e.g., 1 to 5 minutes). Despite these uncertainties, it is clear that November 7, 2020 was a particularly windy day, with hourly average wind speeds for six hours exceeding 25 mph and wind gusts exceeding 40 mph.

Figures 17 and 19 below present the 24-hour average concentrations recorded at monitors in Pinal and Pima Counties on November 7 and 8, 2020. On November 7, 2020, nearly all monitors in Pinal County reported 24-

hour average concentrations exceeding the NAAQS of $150 \mu\text{g}/\text{m}^3$, with the highest concentration reaching $624 \mu\text{g}/\text{m}^3$. In Pima County, the Rillito monitor recorded a high concentration of $408 \mu\text{g}/\text{m}^3$, while the Geronimo, Orange Grove, and South Tucson monitors all exceeded $100 \mu\text{g}/\text{m}^3$. On November 8, 2020, concentrations at Pinal County and the Rillito monitors dropped significantly, and the concentrations in the Tucson area were within the moderate range.

Figure 17: 24-Hour Average PM10 Concentrations in Pinal and Pima Counties on November 7, 2020

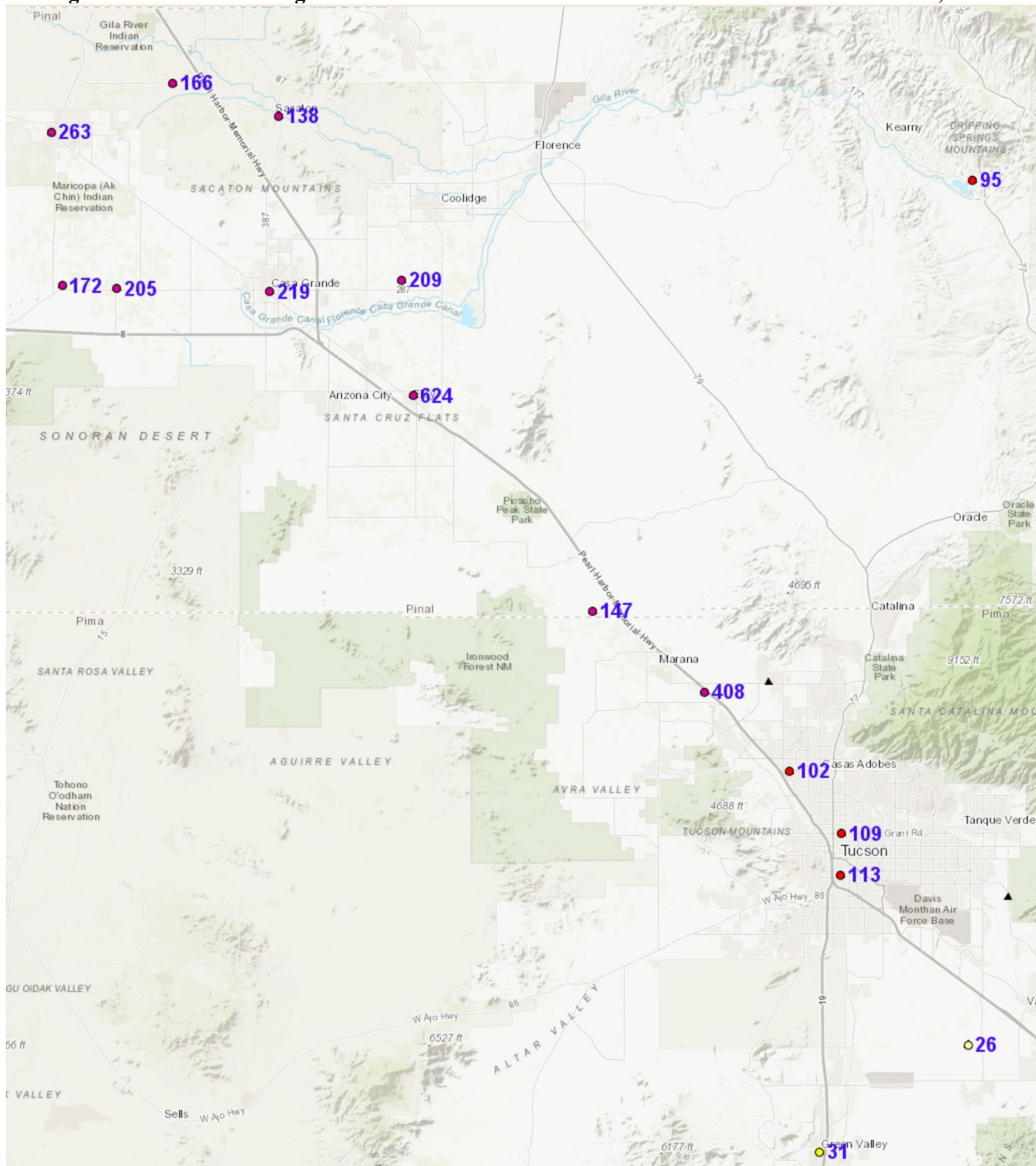


Figure 18: 24-Hour Average PM10 Concentrations in Pinal and Pima Counties on November 8, 2020

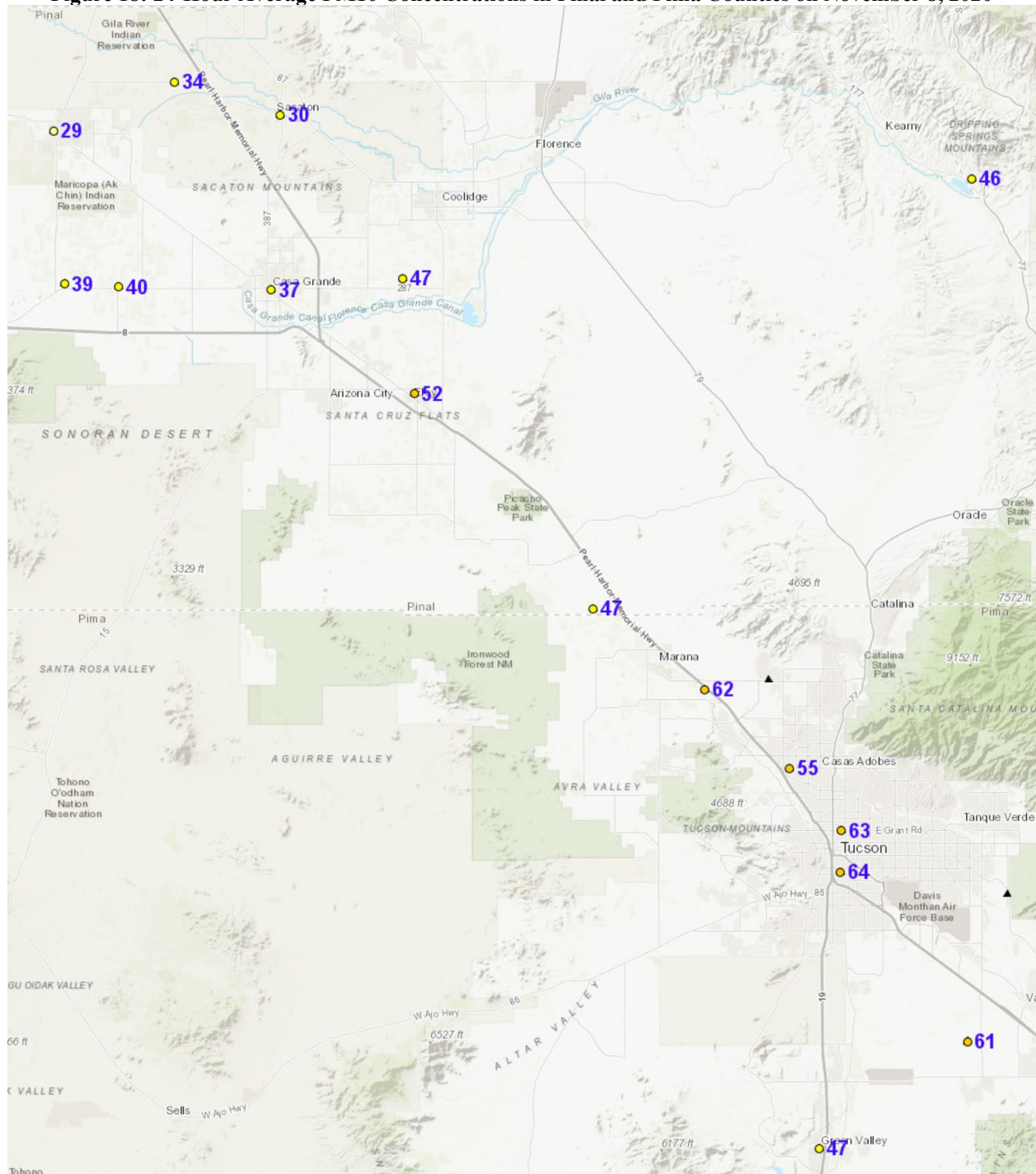
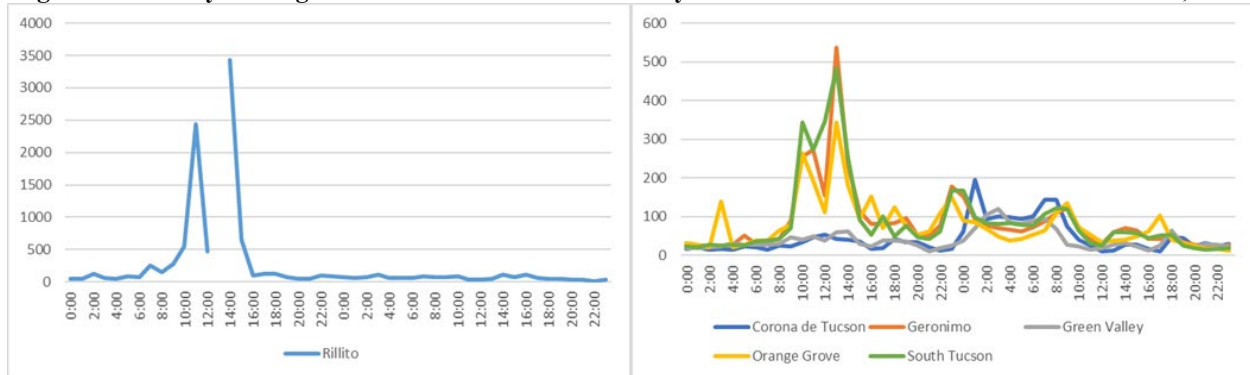


Figure 19 below illustrates hourly average concentrations at Pima County monitors from November 7 to 8, 2020. On November 7, the hourly average concentration at the Rillito monitor began increasing at 8:00 AM, peaking at

approximately 3,500 $\mu\text{g}/\text{m}^3$ between 1:00 PM and 2:00 PM. Similarly, the Geronimo, Orange Grove, and South Tucson monitors experienced significant spikes around 1:00 PM, with concentrations exceeding 300 $\mu\text{g}/\text{m}^3$. In contrast, concentrations at the Corona de Tucson monitor remained generally low on November 7, but rose significantly from midnight to early morning on November 8, 2020 as the air carried pollution south.

Figure 19: Hourly Average Concentrations of Pima County Monitors from November 7 to November 8, 2020

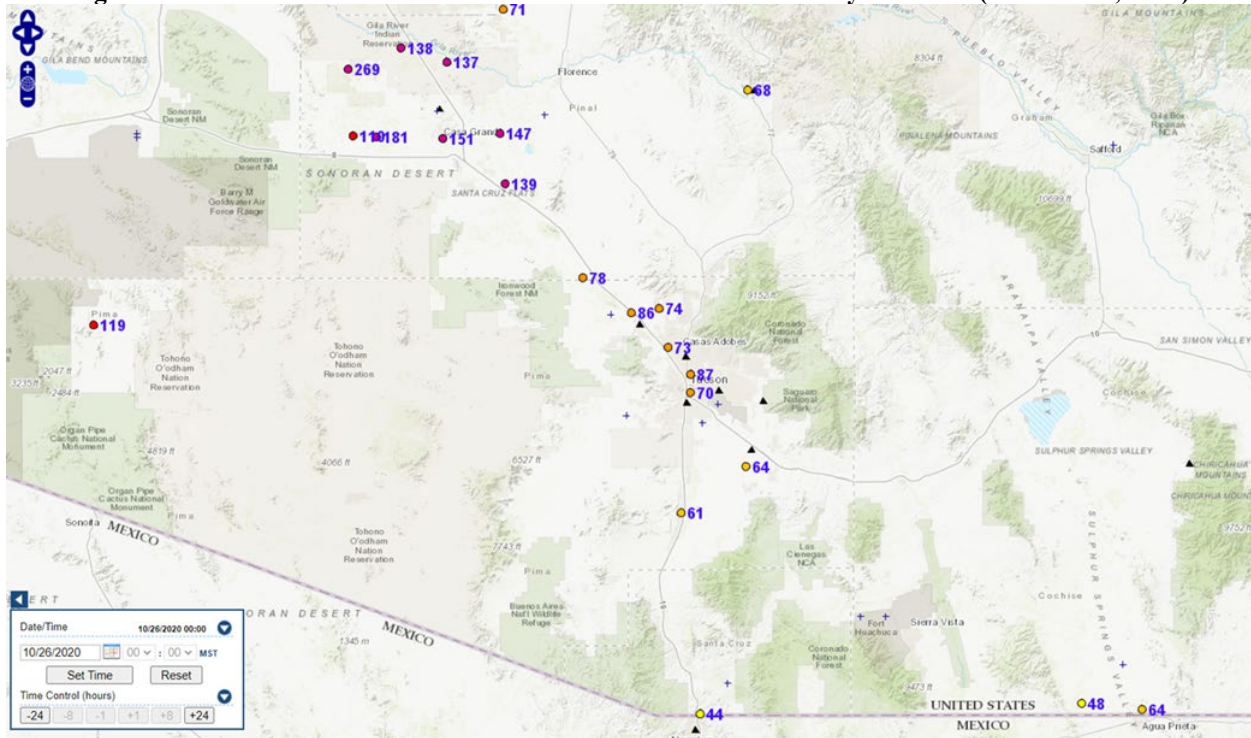


Based on the discussion above, the Department has determined that carryover from November 7, 2020 significantly contributed to elevated concentrations observed at the Corona de Tucson monitor on November 8, 2020.

(b) October 26, 2020

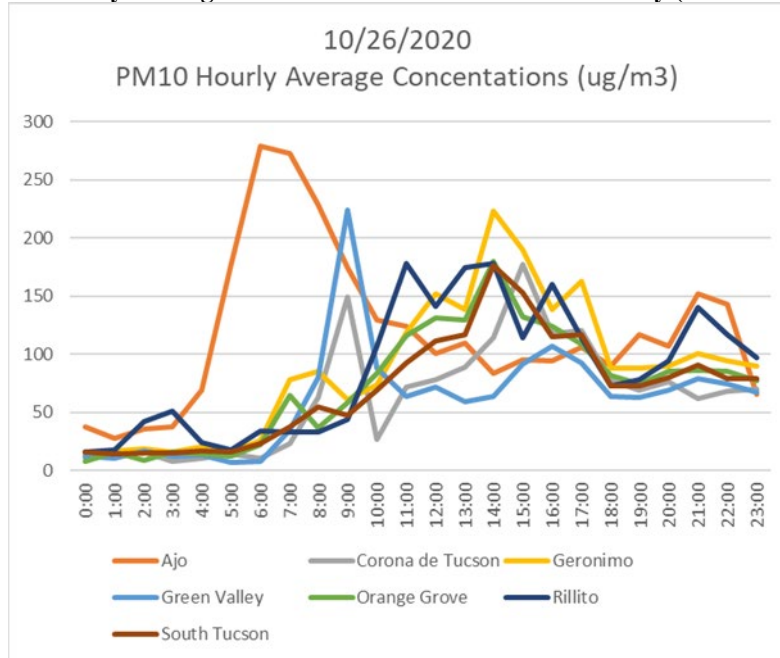
Although sustained wind speeds on October 26, 2020 were below 25 mph, significant intermittent gusts elevated PM_{10} levels across Pinal and Pima Counties. As shown in Figure 20 below, the 24-hour average concentrations for most Pinal County monitors approached or exceeded the PM_{10} NAAQS of 150 $\mu\text{g}/\text{m}^3$, while Pima County monitors recorded concentrations reached elevated concentrations in the moderate or "unhealthy for sensitive groups" range.

Figure 20: 24-Hour PM10 Concentrations for Pinal and Pima County Monitors (October 26, 2020)



In addition, hourly average concentrations in Figure 21 below revealed a significant spike at all Pima County monitors, with maximum hourly average concentrations exceeding 175 µg/m³. In response, the Pima County Department of Environmental Quality (PDEQ) issued an Air Quality Health Watch for October 26, 2020, citing "high winds" as the trigger.

Figure 21: Hourly Average PM10 Concentrations in Pima County (October 26, 2020)



Based on the modeling report, Technical Support Document, and above analyses, the Department has determined that concentrations observed on these dates are atypical. Therefore, consistent with Appendix W to 40 CFR Part 51 and EPA guidance, the exclusion of these dates from the determination of the background concentration for PM10 for the Copper World Project is appropriate.

Comment 13: The commenter states that the Copper World Project will interfere with attainment of the National Ambient Air Quality Standards for PM10, and therefore ADEQ must deny the air quality permit for the Copper World Project.

ADEQ Response:

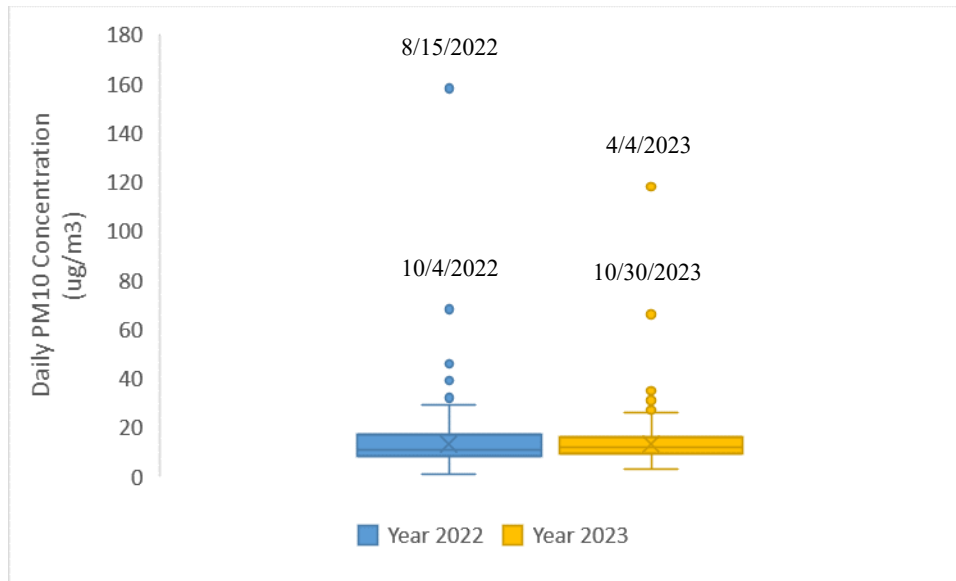
Based on the Department’s review of the permit application and modeling report, in addition to independent analyses conducted by the Department, the Department has determined that the construction and operation of the Copper World Project will not interfere with the attainment of the National Ambient Air Quality Standards. In addition to the discussion above, the Department has conducted the following supplemental analyses to further demonstrate that the Copper World Project will not interfere with attainment of the NAAQS for PM10:

- (1) Evaluation of 2021 to 2023 Air Quality Monitoring Data

When submitting the permit application for the Copper World Project in 2022, Copper World, Inc. evaluated background concentrations based on the available PM10 monitoring data from

2019 through 2021 data. By the time the Department proposed the draft permit in 2024, monitoring data from 2022 and 2023 had become available. As discussed in the TSD, the Department reviewed the 2022 and 2023 data, and identified four data points as appropriate for exclusion due to atypical events. Figure 22 shows 24-hour PM₁₀ concentrations for 2022 and 2023 and the four data points identified.

Figure 22: Atypical Ambient Concentrations of PM₁₀ in 2022 and 2023



In addition, Table 1 below provides more detailed descriptions of the four events identified by the Department:

Table 1: Description of Atypical Events in 2022 and 2023

Date	24-hour Concentration for PM ₁₀ (ug/m ³)	Notes
August 15, 2022	158	PDEQ issued a High Pollution Advisory for PM ₁₀ on August 15, 2022. Dust was blown into the Tucson region from Maricopa and Pinal Counties on August 14, 2022. The PDEQ's 2023 Air Quality Report classified this as an exceptional event.
April 4, 2023	118	PDEQ issued a Dust Action Day for PM ₁₀ for the Tucson metropolitan area on April 4, 2023 due to "high winds last night." This was the worst day for all monitors in this region, including Corona de Tucson, Green Valley, Orange Grove, South Tucson, Tangerine, and Geronimo monitors, in 2023.

October 4, 2022	68	High Wind Event: Sustained wind exceeded 25 mph, with gusts approaching 50 mph. This was the worst day for the Green Valley monitor and the second worst day for Corona de Tucson monitor in 2022.
October 30, 2023	66	High Wind Event: Sustained wind exceeded 25 mph, with gusts approaching 40 mph.

After removing these four dates from 2022 and 2023, along with three dates from 2021 (as discussed above), the Department calculated monthly background concentrations using the maximum 24-hour concentrations for each month over the three years. The resulting background concentrations are summarized in Table 2 below:

Table 2: Monthly Background Concentrations (2021 through 2023)

Month	PM ₁₀ Background Concentration (µg/m ³)
January	35
February	33
March	32
April	39
May	29
June	40
July	31
August	29
September	32
October	46
November	39
December	27

The Department ran the model using the updated background concentrations. The model design value for PM₁₀ concentrations (modeled concentration plus background concentration) was 145 µg/m³ without accounting for the dry deposition mechanism available in AERMOD. When evaluating utilizing dry deposition, the model design value decreased to 138 µg/m³. As such, evaluating using most recent monitoring data for background concentration further demonstrates that the Copper World Project will not interfere with attainment of the NAAQS from PM₁₀.

- (2) Elevated Model Concentrations and High Wind Events are Unlikely to Overlap

For a cumulative impact analysis for a permit application, the total predicted concentration distribution should represent combinations of project impacts and background concentrations that can reasonably be expected to occur simultaneously.

AERMOD, a steady-state Gaussian plume model, assumes that the modeled concentrations are inversely proportional to wind speed.⁶ For the Copper World project, the dominated emission source of PM₁₀ ambient impacts is fugitive emissions from haul trucks traveling on haul roads. For such near-ground releases, high modeled concentrations from AERMOD typically occur under light winds, stable conditions. Therefore, it is highly unlikely that the highest modeled concentrations from AERMOD and the highest monitoring concentrations caused by high wind events would coincide. Adding atypical monitoring concentrations from high wind events to the highest modeled concentrations would be unnecessarily conservative for the purpose of a model compliance demonstration.

As such, the Department has determined that the construction and operation of the Copper World Project will not result in interference with the attainment of the NAAQS. Therefore, in accordance with A.R.S. § 41-1030, the Department is required to issue the air pollution control permit for the Copper World Project.

Comment 14: The commenter states that the site-specific meteorological and air quality measurement systems used in the air dispersion model was not provided to the public, making it impossible to check for accuracy and completeness.

ADEQ Response:

During the public comment period, the Department made the modeling report and technical support document available to the public as part of the review materials. These documents include a detailed summary of the meteorological data and modeling analysis, which are sufficient for understanding and evaluating the model results for the Copper World Project.

Due to the size of the meteorological data and modeling files, the Department did not include them in the standard public review package. However, these large files are made readily available upon request to interested community members during the comment period. The Department is committed to providing the requested materials promptly using appropriate tools to facilitate the sharing of large datasets.

⁶ https://www.epa.gov/system/files/documents/2024-11/appendix_w-2024.pdf. Section 8.4.7

Comment 15: The commenter states that the Copper World Project was only required 1-year of site-specific monitor, rather than the EPA's preferred timespan of 3 to 5 years.

ADEQ Response:

As outlined in Appendix W to 40 CFR Part 51, the EPA's Guideline on Air Quality Modeling requires the use of 5 years of National Weather Service (NWS) meteorological data, or at least 1 year of site-specific meteorological data, or at least 3 years of prognostic meteorological data. The Guideline further states that if 1 year or more, up to 5 years, of site-specific data are available, these datasets are preferred for use in air quality analyses.

For this case, the use of one year of site-specific data satisfies the requirements outlined in Appendix W to 40 CFR Part 51. The selected data are representative of the site conditions and provide a robust basis for the air quality modeling analysis. While the EPA prefers multiple years of site-specific data when available, the use of one year is explicitly authorized and meets regulatory requirements.

Comment 16: The commenter expressed concern that inconsistent timeframes were utilized to evaluate background concentrations and meteorological conditions.

ADEQ Response:

Appendix W to 40 CFR Part 51 does not require that meteorological data and background air quality concentration data be collected within the same timeframe. Instead, Appendix W to 40 CFR Part 51 specifies the following:

- (1) Meteorological data should be selected based on spatial and climatological representativeness and the ability of the data to accurately characterize transport and dispersion conditions in the area of concern. There is no restriction on the age of the meteorological dataset as long as it meets these criteria.
- (2) For background concentrations, Appendix W recommends using the most recent, quality-assured air quality monitoring data available at the time of the analysis.

In this case, site-specific meteorological data were collected from two monitoring locations on the east and west sides of the Santa Rita Mountain during different timeframes. The Department determined that both datasets are representative of the transport and dispersion conditions on their respective sides of the mountain and are appropriate for the modeling analysis.

Regarding background air quality concentrations, the applicant used 2019 to 2021 data, which were the most recent quality-assured data available when the application was submitted in 2022. Additionally, the agency reviewed 2021 to 2023 data as part of the technical support document to further ensure the analysis remained current. With respect to historical PM10 data from the Rosemont Copper Project, the Department confirmed that this data remains representative due to the lack of change in sources of pollution impacting the area since the monitoring station ceased operating.

Based on this review, the Department concludes that the selection of meteorological data and background concentration data adheres to the requirements and recommendations specified in Appendix W to 40 CFR Part 51. As such, the Department maintains that the data used in the analysis provides a reliable and regulatory-compliant basis for the air dispersion modeling evaluation.

Comment 17: The commenter states that the model report does not clearly state the meteorological data used to evaluate upper air observations in the air dispersion model.

ADEQ Response:

Copper World, Inc. employed AERMET meteorological preprocessor to process site-specific data collected from both the east and west sides of the Santa Rita Mountain, incorporating concurrent upper air radiosonde data obtained from the Tucson International Airport National Weather Service (NWS) meteorological station. Specifically, for processing the east-side meteorological data, upper air data from March 2007 to February 2009 were used. For the west-side meteorological data, upper air data from May 2023 to April 2024 was used.

Comment 18: The commenter states that the final model report utilizing site-specific meteorological data did not include a sensitivity analysis, as was required when Copper World, Inc. initially proposed to utilize meteorological data from the Tucson International Airport.

ADEQ Response:

Appendix W to 40 CFR Part 51 does not require a sensitivity analysis if the meteorological data used are representative of the transport and dispersion conditions in the area of concern. As discussed in the TSD, ADEQ initially required Copper World, Inc. to conduct a sensitivity analysis for certain variables when Copper World, Inc. proposed using 5 years of Tucson International Airport meteorological data. This requirement was due to expected differences in meteorological conditions between the Copper World Project site and the Tucson International Airport for certain meteorological variables, such as ambient temperature, surface characteristic parameters (such as Albedo, Bowen ratio and

surface roughness), and cloud cover. The sensitivity analysis results indicated that ambient temperature and cloud cover have minimal impact on the modeled design concentrations. Additionally, using the surface characteristic parameters based on the project site results in modeled design concentrations that were approximately 15% lower than those based on the airport site. This reduction was primarily attributed to increased surface roughness at the Copper World Project site relative to the Tucson International Airport.

The Department determined that site-specific meteorological datasets for both the east and west sides of the Santa Rita Mountain, are representative of the transport and dispersion conditions on their respective sides of the mountain and are appropriate for the modeling analysis. ADEQ acknowledges that ambient temperatures may vary within the Copper World Project on the west-side of the mountain due to a change in elevation (ranging from 4,200 ft to around 6,000 ft). However, the magnitude of the variation in elevation is significantly smaller than the difference between the airport and the project site. As previously discussed, the sensitivity analysis for the airport data demonstrated that ambient temperature had an insignificant impact on the modeled design concentrations. Therefore, the Department concluded that variations in ambient temperature within the project site would not affect the modeled design concentrations.

Furthermore, the surface roughness in the mountainous areas is higher than the base of the mountain where the meteorological data were collected. Increased surface roughness enhances atmospheric mixing, thereby decreasing modeled concentrations. From this perspective, using the surface roughness derived from the location of the site-specific meteorological station provides conservative modeled estimates

In conclusion, based on the above discussion, from both regulatory and technical perspectives, the Department determined it was not appropriate to require Copper World, Inc. to conduct an additional sensitivity analysis when site-specific meteorological data representative of the project site was used.

Comment 19: The commenter states that the model report and technical support document do not clearly identify the number of data points removed from the PM10 background concentration for the Corona de Tucson monitor.

ADEQ Response:

As discussed above and shown in Modeling Report Table 4-1 and Appendix B, seven dates were excluded from the determination of the background concentration of PM10. The excluded dates were: January 19, 2021; April 1, 2021; July 12, 2021; October 26, 2020; November 8, 2020; October 25, 2019; and November 12, 2019.

Comment 20: The commenter states that the model report and technical support document do not clearly identify the monthly inputs for PM10 background concentration or discuss the methodology for determining monthly background concentrations for the Corona de Tucson monitor.

ADEQ Response:

Table 4-1 of the Modeling Report identifies the monthly background concentrations utilized for the Corona de Tucson monitoring. The monthly background concentrations can be found in the table below:

Table 3: Modeled Monthly Background Concentrations

Month	PM10 Background Concentration (µg/m ³)
January	19
February	40
March	32
April	40
May	31
June	40
July	28
August	39
September	53
October	30
November	39
December	30

Comment 21: The commenter questions whether seasonal or monthly values were used to develop PM10 background concentrations for the Corona de Tucson monitor.

ADEQ Response:

The monthly values discussed above were used to develop PM10 background concentrations. In AERMOD, users can specify temporally varying background concentrations using the BACKGRND keyword on the SO pathway. Background concentrations specified with the BACKGRND keyword are combined with source impacts on a temporally paired basis to estimate cumulative ambient impacts. The discussed seasonal values were not implemented in the air dispersion model.

Comment 22: The commenter expressed concern that the technical support document states that ADEQ re-ran the model using the most recent background concentrations rather than requiring the applicant to report the results.

ADEQ Response:

During the review process, a review agency may independently conduct a modeling analysis to further ensure that the National Ambient Air Quality Standards are protected under various scenarios. This is a standard part of the review process and in no way suggests or implies that the Department is acting on behalf of the applicant.

Comment 23: The commenter states that the change in PM10 monitoring data from Corona de Tucson for background concentrations west of the ridgeline of the Santa Rita Mountains to the historical Rosemont Copper Project PM10 monitor for background concentrations east of the ridgeline was not adequately justified.

ADEQ Response:

As discussed in the TSD, PM10 monitoring data in Arizona is strongly influenced by climate conditions, elevation variations, precipitation patterns, and the degree of localized emissions of coarse particulate matter at monitoring station sites. Due to the distinct airsheds on the east and west sides of the Santa Rita Mountains, with the west side being exposed to more local and regional emission sources, the Department determined that it was necessary to assess the PM10 background concentration separately for each side.

For the west side of the Santa Rita Mountains, the Corona de Tucson monitor was selected. This monitor is located approximately 13-km from the Copper World Project's northern boundary and was chosen for determining background concentrations due to its proximity and designation as a "regional scale" monitor. The Department determined that the use of Corona de Tucson monitor to determine the PM10 background concentrations for the west side of the Santa Rita Mountains was well justified. With respect to the historical PM10 monitoring data from the Rosemont Copper Project, the Department confirmed that sources impacting the monitor remain consistent with the time period that the monitor was in operation. Therefore, the Department maintains that the monitoring data remains representative of the area.

Comment 24: The commenter states that supporting documentation for the approval of the use of the Rosemont Copper Project meteorological station was not made available or justified.

ADEQ Response:

As discussed in the TSD, site-specific meteorological monitoring on the east side of the Santa Rita Mountains was conducted to support the previous permit action for the Rosemont Copper Project. The Quality Assurance Project Plan for this monitor was previously approved by the Department, and the monitoring data was authorized for use in the air dispersion modeling conducted in support of the Rosemont Copper Project. Upon review, the Department determined that the monitoring data

remain representative of the meteorological conditions of operations conducted by the Copper World Project on the east side of the Santa Rita Mountains. Therefore, the Department approved use of this meteorological monitoring data for evaluation of ambient air impacts resulting from operation the Copper World Project east of the ridgeline of the Santa Rita Mountains.

Comment 25: The commenter expressed concerns that observation data for the previous Rosemont Copper Project PM10 monitor do not coincide with the dates for the Corona de Tucson monitor.

ADEQ Response:

Appendix W to 40 CFR Part 51 does not mandate that the time period of background concentrations coincide. The key consideration is not aligning time periods, but ensuring that the background concentrations are representative for the areas of interest. For historical data, this includes ensuring that sources of pollution impacting the monitor (or lack thereof) have remained consistent over time.

Comment 26: The commenter expressed concern that attainment with the National Ambient Air Quality Standards for impacts east of the ridgeline were evaluated based on annual background concentrations, which is inconsistent with the use of monthly background concentrations to evaluate impacts west of the ridgeline.

ADEQ Response:

According to Appendix W to 40 CFR Part 51, the applicant can use uniform background concentrations or employ a more refined approach that account for spatial and temporal variability. For this project, the applicant used two different approaches to determine PM10 background concentrations separately for the east and west sides of the Santa Rita Mountains. From a regulatory standpoint, both approaches are acceptable.

Comment 27: The commenter expressed concern that the applicant only utilized criteria to exclude monitoring data from background concentrations for the Corona de Tucson monitor, but did not use the same approach for monitoring data at the Rosemont Copper Project monitor despite presenting analysis of statistical anomalies in the model report.

ADEQ Response:

In the previous permitting action for the Rosemont Copper Project, the applicant performed a statistical analysis to demonstrate that the highest daily concentration ($71.3 \mu\text{g}/\text{m}^3$) was an outlier. However, the applicant did not conduct any additional analysis or provide supporting documentation to explain as to why the concentration spiked on this

specific day. As a result, the Department did not approve the removal of this highest concentration.

For the Copper World Project, the applicant still chose not to conduct an exceptional event analysis for this date, and instead included this highest concentration in the background concentration calculation. As such, the Department determined that the obtained background concentration was conservative and acceptably representative.

Comment 28: The commenter expressed concern that monthly background concentrations were assumed to be zero when evaluating attainment of the National Ambient Air Quality Standards for impacts west of the ridgeline of the Santa Rita Mountains.

ADEQ Response:

The Department confirms that monthly background concentrations directly input into the model were not assumed to be zero. Monthly background concentrations implemented into the model are discussed in Comment 20 above.

Comment 29: The commenter states that impacts East of the Santa Rita Mountains will exceed the National Ambient Air Quality Standards for PM10 if the most conservative monitoring values were used to evaluate the background concentration east of the ridgeline of the Santa Rita Mountains.

ADEQ Response:

The Department disagrees that utilizing the most conservative monitoring values is the appropriate approach for regulatory air dispersion modeling analyses. When a uniform background concentration is used, Appendix W to 40 CFR Part 51, the EPA’s Guideline on Air Quality Modeling, recommends the use of the current design value for the applicable NAAQS as a starting point. For 24-hour PM10, the form of NAAQS is defined as “not to be exceeded more than once per year on average over 3 years”. ADEQ Air Dispersion Modeling Guidelines further recommends using the average of the second-highest 24-hour concentrations recorded for each year over a three-year period. The table below provides a summary of the highest and second-highest concentrations recorded during the three-year monitoring period.

Table 4: 24-Hour Concentrations at East Site-Specific PM10 Monitoring

Year	Highest Concentration (µg/m ³)	2 nd Highest Concentration (µg/m ³)
July 2006 – June 2007	71.3	27.0
July 2007 – June 2008	40.3	28.2

July 2008 – June 2009	31.6	21.2
Average	47.7	25.5

Copper World, Inc. could have utilized a background concentration of 25.5 $\mu\text{g}/\text{m}^3$, consistent with recommendations made in the ADEQ Air Dispersion Modeling Guidelines; however, they instead selected a background concentration of 47.7 $\mu\text{g}/\text{m}^3$, which was calculated as the average of the highest 24-hour concentrations recorded for each year. The Department determined that this approach was conservative, therefore the use of the background concentration of 47.7 $\mu\text{g}/\text{m}^3$ was approved.

Comment 30: The commenter requested verification that the Copper World Project's air dispersion model was being held to the revised National Ambient Air Quality Standard for particulate matter with aerodynamic diameter less than 2.5 microns.

ADEQ Response:

The Department confirms that the ambient air impact analysis conducted for the Copper World Project was required to demonstrate that emissions from the Copper World Project will not interfere with the recently revised National Ambient Air Quality Standard for annual PM_{2.5} of 9 $\mu\text{g}/\text{m}^3$.

Comment 31: The commenter states that insufficient meteorological monitoring was conducted to account for the range of meteorological conditions in the area.

ADEQ Response:

As previously discussed, Appendix W to 40 CFR Part 51 requires the use of 5 years of NWS meteorological data, or at least 1 year of site-specific meteorological data, or at least 3 years of prognostic meteorological data. The Copper World Project has collected site-specific meteorological data for the required 1-year period, therefore the regulatory requirement for conducting air dispersion modeling has been satisfied.

Comment 32: The commenter expressed concern that the air quality monitoring stations used to develop background concentrations used in the ambient air impact analysis for the Copper World Project were not located within close proximity of the project area.

ADEQ Response:

As discussed in the TSD, the Department has determined that air quality monitoring stations utilized to develop background concentrations for the ambient air impact analysis conducted in support of the Copper World Project were located in areas that are representative of the areas impacted by the Copper World Project, or are conservative representations of

background concentrations based on the presence of anthropogenic emissions impacting urban monitors that are not present at the location of the Copper World Project. As such, the Department has determined that the background concentrations selected are appropriately conservative and representative of the impacted areas.

Comment 33: The commenter states that the air quality monitoring and dispersion model are not representative of meteorological conditions near the Copper World Project.

ADEQ Response:

The Department disagrees that meteorological inputs and background concentrations that were utilized in the ambient air impact assessment are not representative of the Copper World Project. Both meteorological stations utilized in the air dispersion model were located within the boundaries of the Copper World Project, and these stations were operated according to Quality Assurance Project Plans developed in order to meet the requirements for use in regulatory modeling. In addition, air quality monitors utilized to develop background concentrations were each deemed to be representative of current air quality conditions in the project, or were deemed to be conservative due to the impact of urban sources of pollution on the monitors that are not present at the site of the Copper World Project.

Comment 34: The commenter states that the permit is improperly based on best-case scenarios for meteorological impacts, equipment operation, and compliance with emissions standards.

ADEQ Response:

The Department disagrees that the ambient air impact analysis improperly considers best-case scenarios for the Copper World Project. As discussed in A.A.C. R18-2-334.C.2.c, the ambient air impact assessment is intended to account for all operational limitations, emissions standards, and emissions decreases adopted as enforceable requirements in the permit. The ambient air impact assessment conducted to support issuance of an air quality permit is not intended to evaluate air quality impacts resulting from operations that are in violation of the legal requirements of the permit.

Comment 35: The commenter expressed concern regarding the validity of the air dispersion model in evaluating long-term impacts of a source.

ADEQ Response:

The ambient air impact analysis conducted in support of the Copper World Project is intended to evaluate worst-case emissions assuming operation of the Copper World Project is consistent with legally enforceable requirements. The ambient air impact analysis addresses the maximum operating capacity of the Copper World Project, in addition to the

maximum out-of-pit hauling emissions. In particular, out of pit hauling emissions were determined to be a significant contributor to ambient concentrations of particulate matter due to the low release height associated with emissions from haul roads and short distance between haul roads and the ambient air boundary in certain areas of the Copper World Project. Emissions related to hauling will not be present following closure of the Copper World Project, therefore the Department does not believe that adverse long-term air quality impacts will result from the operation or closure of the Copper World Project.

In addition, long-term sources of air pollution, such as wind erosion from tailings storage facilities, are considered in the ambient air impact analysis and would not be expected to increase in emissions following closure of the Copper World Project. The Department also notes that the air quality monitors in Green Valley are among the lowest in ambient concentrations of particulate matter despite the monitor's close proximity to active mining operations and tailings storage facilities.

Comment 36: The commenter states that fugitive emissions from the Copper World Project were not included in the air dispersion model required to satisfy the Arizona Minor New Source Review program.

ADEQ Response:

The Department disagrees that fugitive emissions were not included in air dispersion modeling for the Copper World Project. All quantifiable sources of fugitive emissions associated with the Copper World Project that are eligible for evaluation in the ambient air impact analysis required under the Department's Minor New Source Review program were accounted for in the air dispersion model.

Comment 37: The commenter expressed concern regarding the Department's reliance on air dispersion modeling in evaluating the Copper World Project.

ADEQ Response:

In accordance with A.R.S. § 41-1030, the Department is required to make licensing decisions within the legal requirements outlined by the applicable permitting programs. The Arizona Minor New Source Review program requires applicants to implement Reasonably Available Control Technology (RACT) or demonstrate through air dispersion modeling that emissions resulting from the operation of the source will not result in interference with attainment of the National Ambient Air Quality Standards. Although the air pollution control equipment proposed by Copper World, Inc. would satisfy the requirement to implement RACT, Copper World, Inc. also opted to conduct an ambient air impact analysis to further demonstrate that the Copper World Project would not result in interference with attainment of the National Ambient Air Quality Standards in areas accessible to the public. The Department's review has

verified that the permit application for the Copper World Project meets the requirements of Title 49 of the A.R.S. and Title 18, Chapter 2 of the A.A.C., therefore the Department is required to issue the air pollution control permit.

Comment 38: The commenter expressed concern that the air dispersion model does not account for meteorological phenomena such as inversion layers and their impact on local air quality.

ADEQ Response:

The air dispersion model (AERMOD) accounts for inversion layers and their impact on pollutant dispersion and air quality. Inversions occur when temperature increases with height, resulting in stable conditions that significantly reduce vertical mixing of air. AERMET, the meteorological processor for AERMOD, processes raw meteorological data and identifies the transition between day and night. During nighttime, AERMET assumes zero convective mixing heights and considers only mechanical mixing heights (shear-induced). In contrast, AERMET calculates both convective and mechanical mixing heights. The lower mixing height at night, caused by inversions and stable conditions, typically leads to higher pollutant concentrations near the surface.

Comment 39: The commenter suggests that the lack of consideration of various factors that influence blasting-related emissions, such as sleep time, wicking, ammonium nitrate dissolution, and borehole diameter indicates that demonstration of the National Ambient Air Quality Standards impacted by blasting was not accurately assessed.

ADEQ Response:

The Department disagrees that factors such as sleep time, wicking, ammonium nitrate dissolution, and borehole diameter are appropriate to address in the context of an ambient air impact assessment. Factors such as extended sleep time, wicking, and dissolution of ammonium nitrate are not expected to occur within normal operations of the Copper World Project, while small boreholes are not common practice in large-scale mining operations. While the ambient air impact analysis is intended to address worst-case impacts from the Copper World Project during normal operations assuming compliance with the permit, it is not intended to evaluate scenarios that are outside of normal operating procedures or instances of non-compliance with the requirements of the permit.

E. AIR POLLUTION CONTROL EQUIPMENT

Comment 40: The commenter requested clarification on the operating principals behind a water suppression fogging system and how they are installed and configured to control particulate matter emissions.

ADEQ Response:

Water suppression fogging systems operate by spraying a layer of extremely fine water droplets over the source of emissions to entrain, agglomerate, and “knock down” fugitive dust particles resulting from the operation. It is common for fogging systems to be implemented at emissions sources that cannot be enclosed and vent to dust collection systems, often the feed hopper for ore processing operations. These systems are typically installed near the top of the dump pocket of the feed hopper, with nozzles spanning the width of the hopper to ensure that the fugitive dust does not escape the unloading area.

Comment 41: The commenter expressed concern that the compliance demonstration procedures adopted to ensure proper operation of the water suppression fogging systems are insufficient to ensure that the systems are continuously operated according to manufacturer’s specifications.

ADEQ Response:

Condition III.A.2.b and III.A.2.c of Attachment “B” of the permit require the Copper World Project to install, operate, and maintain water suppression fogging systems to control emissions of particulate matter according to manufacturer’s specifications. To ensure that the systems are operating consistent with manufacturer’s specifications, Condition III.A.3.d of the permit requires weekly inspections of spray nozzles to ensure that water is properly flowing and operated consistent with manufacturer’s specifications.

Comment 42: The commenter stated that the Department must adopt quantitative emissions standards and performance testing requirements for the water suppression fogging systems to control emissions of particulate matter consistent with manufacturer’s specifications.

ADEQ Response:

The Department disagrees that quantitative emissions standards are necessary to ensure that fogging systems are performing consistent with manufacturer’s specifications. The application of a control efficiency based on manufacturer’s specifications for an air pollution control system being paired with monitoring, recordkeeping, and reporting requirements to demonstrate that the control system in question is operated consistent with manufacturer’s requirements is common practice in permitting, particularly for systems that do not pass through a stack, chimney, vent, or other functionally equivalent opening, as is the case for the processes controlled by the water suppression fogging systems.

Comment 43: The commenter requested clarification as to how compliance with high control efficiencies for air pollution control equipment will be ensured at all times.

ADEQ Response:

Air pollution control equipment for the Copper World Project is required to be installed according to manufacturer's specifications for the dust collection and control equipment. Ore processing equipment controlled by dust collection equipment is typically located within enclosures, with ventilation systems operated to ensure that these enclosures are operated under negative pressure in order maximize the capture of emissions of particulate matter from ore processing operations to ensure that all emissions are ducted to dust control systems. Copper World, Inc. is required to monitor operating parameters that are indicative of the performance of all air pollution control equipment at the Copper World Project, including pressure drop across dust collection equipment and wet scrubbers, scrubber flow rate, and power to the electrostatic precipitator. Through proper engineering design and construction of the air pollution control systems, and continuous monitoring of operating parameters indicative of the control equipment's performance, the permit developed by the Department ensures that air pollution control equipment is continuously operated according to manufacturer's specifications.

Comment 44: The commenter expressed concern that fine particulate matter (specifically PM_{2.5}) will not be as effectively captured and controlled by the air pollution control equipment to be operated at the Copper World Project.

ADEQ Response:

The Department disagrees that the air pollution control equipment proposed by the Copper World Project is incapable of effectively controlling fine particulate matter, such as particulate matter with aerodynamic diameter less than 2.5 microns.

Particulate matter is classified as either filterable or condensable. Filterable particulate matter is particulate matter capable of being captured on filter media, such as fabric filter dust collectors, and is typically associated with dust. Condensable particulate matter is particulate matter that is often in a gaseous phase when emitted from the exhaust stack, but condenses into liquid droplets or solids in ambient air, and is typically associated with combustion and high temperature processes. While the Department acknowledges that challenges exist for effectively controlling condensable particulate matter, the particulate matter emissions from ore processing operations at the Copper World Project will consist of filterable particulate matter resulting from ore processing operation, which the proposed dust control systems have demonstrated to be capable of effectively controlling, including for particulate matter with aerodynamic diameter less than 2.5 microns.

Comment 45: The commenter expressed concern that a lack of controls methods implemented for the sulfuric acid plant and mining operations would result in significant environmental impacts.

ADEQ Response:

The Department has required Copper World, Inc. to implement extensive control measures to ensure that emissions resulting from the operation of the Copper World Project are minimized. Copper World, Inc. will operate a scrubber at the exhaust stack of the sulfuric acid plant in order to control emissions of sulfur dioxide from the sulfuric acid plant at the Copper World Project. In addition, extensive dust control equipment will be operated to control emissions of particulate matter from ore processing operations, including dust collectors and wet scrubbers. This equipment will be subject to emissions monitoring, performance testing, and operating parameter monitoring requirements to ensure that they are operated in compliance with the permitted emissions standards and manufacturer's requirements at all times.

Copper World, Inc. has also been required to implement a tailings dust management plan and fugitive dust control plan to be approved by the Department, which require the usage of chemical dust suppressants and water application in order to minimize fugitive dust emissions from operations at the Copper World Project. These plans will be subject to annual review to ensure that best practices are being implemented to minimize fugitive dust emissions.

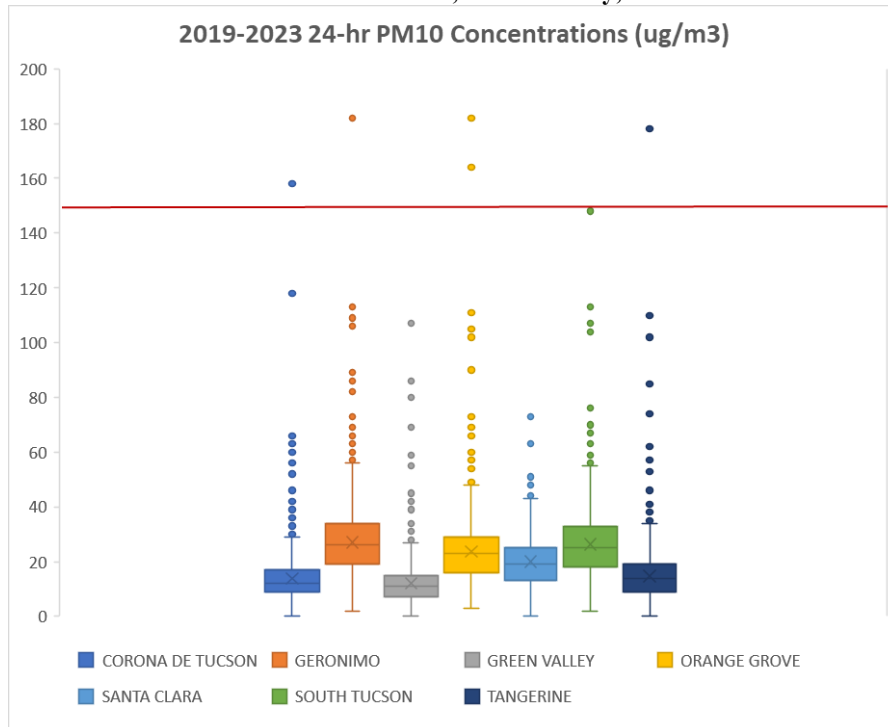
F. AIR QUALITY

Comment 46: The commenter states that air quality in the Tucson, Sahuarita, and Green Valley areas regularly exceed safe levels of particulate matter in the air and will be further impacted by the Copper World Project.

ADEQ Response:

The Department has reviewed the most recent five (5) years of PM10 monitoring data in the Tucson, Green Valley, and Corona de Tucson areas. The Department conducted a statistical analysis of the 24-hour PM10 concentrations for each monitor over this time period, presented in Figure 23 below:

Figure 23: 24-Hour PM10 Concentrations in Tucson, Green Valley, and Corona de Tucson (2019 to 2023)



Over the five-year period, there were a total of five exceedances: two at Orange Grove, and one at each of Corona de Tucson, Geronimo, and Tangerine. It is important to note that these five exceedances were attributed to two exceptional events. According to the Pima County 2023 Air Quality Summary Report, PDEQ designated these events as the “Western Arizona Storm” and “Transport from Maricopa/Pinal”⁷. The above analysis indicates that PM10 concentrations in the area of concern remain below the NAAQS, except in instances of rare exceptional events. Additionally, it is noteworthy that the Green Valley monitor and the Corona de Tucson monitor, the nearest monitors to the Copper World Project, are the cleanest in the region. In particular, the concentrations of the Green Valley area relative to other monitors in Pima County are particularly notable due to the proximity of the Green Valley monitor to large copper mining operations and tailings storage facilities.

The Department also reviewed the most recent five years of PM2.5 monitoring data in the above areas, and no exceedances of the NAAQS for PM2.5 were identified.

⁷ Pima County, 2023 Air Quality Summary Report, <https://content.civicplus.com/api/assets/ec36f49c-5cb6-42cd-beef-7f5329207055>

Comment 47: The commenter expressed concern regarding the impact of emissions, including exhaust from vehicles, resulting from the operation Copper World Project on ozone pollution in the Tucson area.

ADEQ Response:

The Department acknowledges concerns regarding the impact of exhaust of ozone precursors from vehicle emissions associated with the Copper World Project on ozone pollution in the Tucson area. The Department's air quality permitting program does not have the legal authority to evaluate emissions associated with mobile sources, such as vehicle exhaust, in determining the potential to emit or ambient air quality impacts resulting from the operation of stationary sources, such as the Copper World Project. The Department's evaluation of emissions of precursors of ozone pollution from the stationary sources associated with the Copper World Project has demonstrated that these emissions sources will have minimal impact on ozone pollution in Tucson.

G. AIR QUALITY MONITORING

Comment 48: The commenter requested that ADEQ present air quality monitoring data for areas near large mining operations similar to the Copper World Project.

ADEQ Response:

As discussed above, the Pima Department of Environmental Quality operates monitors for PM10 and PM2.5 in Green Valley, located in close proximity to mining operations by Freeport-McMoRan and ASARCO. Figure 23 above demonstrates that, in spite of the monitor being sited in close proximity to active copper mining operations and tailings storage facilities, the Green Valley air quality monitor has been demonstrated as being among the lowest concentrations of ambient particulate matter in Pima County. As such, the Department remains confident that well-regulated mining operations that implement appropriate control measures to minimize their emissions of fugitive dust will result in minimal impacts to air quality in the public.

Comment 49: The commenter states that additional air quality monitors should be installed to protect nearby schools and residential communities.

ADEQ Response:

The Department notes that the Pima Department of Environmental Quality currently operates two PM10 air quality monitors near communities adjoined to the Copper World Project: The Corona de Tucson Monitor and the Pima County Fairground Monitor. In addition, the Department has required that Copper World, Inc. install, operate, maintain, and calibrate PM10 and PM2.5 monitoring equipment near the boundary of the property in the area that was identified to have elevated concentrations in the

ambient air impact analysis. These monitors will be operated and maintained consistent with a Quality Assurance Project Plan that must be reviewed and approved by the Department. Data collected from these monitors is required to be submitted periodically to facilitate the Department's evaluation of the ambient air quality impacts resulting from the operation of the Copper World Project. At this time, the Department does not believe that conducting monitoring in addition to the existing monitors and the monitor required near the perimeter of the Copper World Project is necessary. However, the Department will evaluate additional monitoring needs based on compliance inspections conducted and monitoring data collected once the Copper World Project is operational.

Comment 50: The commenter expressed concern that monitoring will not be conducted for metals suspended in particulate matter emissions resulting from operation of the Copper World Project

ADEQ Response:

Under the Clean Air Act, the Department has limited authority to regulate the emissions of metals identified by the EPA as hazardous air pollutants (HAPs) suspended in particulate matter. For metals suspended in particulate, the EPA has only developed a NAAQS for lead. Ambient air quality standards for other metals identified as hazardous air pollutants that may be suspended in particulate matter, such as manganese compounds, have not been developed by the EPA. As such, the Department does not have legal standards to evaluate any ambient concentrations of hazardous air pollutants against, therefore any modeling or sampling for metals in particulate matter is generally only be utilized for information purposes.

Comment 51: The commenter states that ADEQ does not have ongoing air quality monitoring near the affected communities.

ADEQ Response:

The Pima County Department of Environmental Quality's Air Quality Division currently operates the following air quality monitors within communities that are in close proximity to the Copper World Project:

- (1) The Corona de Tucson PM10 Monitor, which is located south of Andrada Polytechnic High School.
- (2) The Pima County Fairground PM10 monitor, which is located at the Pima County Fairground.
- (3) Green Valley PM10, PM2.5, and Ozone monitor, which is located on the west side of Green Valley.

The Department has also required Copper World, Inc. to install, operate, maintain, and calibrate PM10 and PM2.5 monitors near the boundary of the property in areas identified as having elevated modeled concentrations in the ambient air impact analysis. The monitors will be maintained and operated in accordance with a Quality Assurance Project Plan that is reviewed and approved by the Department. This data will be submitted to the Department periodically, and must be made available to the Department upon request. At this time, the Department does not believe that conducting monitoring in addition to the existing monitors and the monitor required near the perimeter of the Copper World Project is necessary. However, the Department will evaluate additional monitoring needs based on compliance inspections conducted and monitoring data collected once the Copper World Project is operational.

Comment 52: The commenter requested clarification as to whether air quality monitoring will be conducted by an independent agency.

ADEQ Response:

Copper World, Inc. has been required to install, operate, maintain, and calibrate air quality monitors for PM10 and PM2.5 in accordance with a Quality Assurance Project Plan reviewed and approved by the Department. This Quality Assurance Project Plan ensures that the monitors are operated consistent with EPA-approved procedures for collecting data suitable for regulatory purposes. This data is required to be submitted to the Department periodically, and must be made available to the Department upon request. The monitors are to be sited in areas near the property boundary of that Copper World Project that were identified by the air dispersion model as having elevated ambient air concentrations.

The Pima County Department of Environmental Quality also operates air quality monitors in Green Valley, Corona de Tucson, and the Pima County Fairgrounds near communities in close proximity to the Copper World Project. At this time, the Department does not believe that conducting monitoring in addition to the existing monitors and the monitor required near the perimeter of the Copper World Project is necessary. However, the Department will evaluate additional monitoring needs based on compliance inspections conducted and monitoring data collected once the Copper World Project is operational.

H. BONDS

Comment 53: The commenter inquired on the value of bonds issued for the Copper World Project.

ADEQ Response:

The Arizona Department of Environmental Quality does not have legal authority to issue bonds or require financial assurance to obtain an Air Pollution Control Permit for the Copper World Project.

I. CARBON FOOTPRINT

Comment 54: The commenter expressed concern regarding the lack of practices taken to reduce the carbon footprint of the Copper World Project.

ADEQ Response:

The Arizona Department of Environmental Quality does not have legal authority to regulate emissions of carbon dioxide or greenhouse gases in minor new source review permitting.

J. CLASS I PERMIT

Comment 55: Several commenters stated that the Department mischaracterized non-fugitive and fugitive emissions sources from the Copper World Project, and consequently the Department should require Copper World, Inc. to obtain a Class I permit for the Copper World Project.

ADEQ Response:

The Department disagrees with the assertion that the Copper World Project was inappropriately classified as a Class II synthetic minor source due to the mischaracterization of fugitive and non-fugitive emissions.

In general, the class of permit required for a stationary source is dependent on the source's potential to emit. A stationary source's potential to emit is defined in Arizona Administrative Code (A.A.C.)⁸ R18-2-101(11) as "the maximum capacity of a stationary source to emit a pollutant... under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is legally and practically enforceable..." According to A.A.C. R18-2-302.B.1.a, a Class I permit shall be required for any major source. A.A.C. R18-2-101(75)(c) defines major source as "a major stationary source... that directly emits or has the potential to emit, 100 tons per year (tpy) or more of any air pollutants including any major source of fugitive emissions of any such pollutant..." This definition also states that "the fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source... unless the source belongs to a section 302(j) category." In addition, applicants have the ability to reduce the potential to emit of a stationary source in order to avoid triggering

⁸ Title 18, Chapter 2 of the Arizona Administrative Code, https://apps.azsos.gov/public_services/Title_18/18-02.pdf

otherwise applicable requirements, such as the requirement to obtain a Class I permit, by voluntarily accepting enforceable emissions limitations and compliance demonstration procedures in accordance with A.A.C. R18-2-306.01.A.

Section 302(j) categories include any of the sources listed under the definition of categorical source in A.A.C. R18-2-101(23), or any category of affected facility which, as of August 7, 1980, is regulated under section 111 (new source performance standards) or 112 (national emissions standards for hazardous air pollutants) of the Clean Air Act. "Categorical sources" means the following classes of sources:

Table 5: Categorical Sources (See A.A.C. R18-2-101(23))

Section 302(j) Source Categories	
Coal cleaning plants with thermal dryers	Sulfur recovery plants
Kraft pulp mills	Carbon black plants using the furnace process
Portland cement plants	Primary lead smelters
Primary zinc smelters	Fuel conversion plants
Iron and steel mills	Sintering plants
Primary aluminum ore reduction plants	Secondary metal production plants
Primary copper smelters	Chemical process plants, which shall not include ethanol production facilities that produce ethanol by natural fermentation included in North American Industry Classification System codes 325193 or 312140
Municipal incinerators capable of charging more than 50 tons of refuse per day	Fossil-fuel boilers, combinations thereof, totaling more than 250 million Btus per hour heat input
Hydrofluoric, sulfuric, or nitric acid plants	Petroleum storage and transfer units with a total storage capacity more than 300,000 barrels
Petroleum refineries	Taconite ore processing plants
Lime plants	Glass fiber processing plants
Phosphate rock processing plants	Charcoal production plants
Coke oven batteries	Fossil-fuel-fired steam electric plants and combined cycle gas turbines of more than 250 million Btus per hour heat input

The Copper World Project includes a sulfuric acid plant. Therefore, all fugitive emissions associated with the operation of the sulfuric acid plant, including particulate matter emissions associated with vehicles traffic related to the delivery of molten sulfur and sale of sulfuric acid, are

considered in evaluating the potential to emit of the Copper World Project. However, the Copper World Project is not a stationary source operating under one of the listed source categories above, therefore fugitive emissions associated with mining operations are not to be considered when evaluating the potential to emit of the Copper World Project.

Fugitive emissions are defined in A.A.C. R18-2-101(59) as “those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.” As noted in the 1999 EPA Memorandum titled “Interpretation of Definition of Fugitive Emissions in Parts 70 and 71”⁹, emissions are generally assumed to be non-fugitive “when a source is subject to a national standard requiring of collection of emissions, these emissions cannot be considered fugitive” and “emissions which pass through a stack, chimney, vent, or other functionally-equivalent opening are not fugitive.” In the case of fugitive emissions, the memo states that, “where emissions are not actually collected at a particular site, the question of whether the emissions are fugitive or nonfugitive should be based on a factual, case-by-case determination made by the permitting authority.” While these considerations generally do not account for cost, they must account for the classification of fugitive vs. non-fugitive emissions from similar sources with consideration of technical or engineering characteristics of the sources.

Several concerns were raised by commenters regarding the determination of whether source of emissions from the Copper World Project were appropriately identified as fugitive emissions, specifically: uncaptured process emissions from ore processing operations, wind erosion emissions from storage of unprocessed ore, material handling emissions from loading and unloading of haul trucks, and wind erosion from tailings storage facilities. The Department’s response to each of the topics raised can be found below.

Comment 56: Several commenters stated that ADEQ must consider emissions of particulate matter from ore processing operations non-fugitive emissions for the purposes of evaluating potential to emit for the Copper World Project.

ADEQ Response:

According to the requirements of the Air Quality Permit No. 99659 for the Copper World Project, the vast majority of the emissions units in the ore processing operation are required to be captured and controlled by dust collection systems, which enclose the emissions sources to ensure maximum capture and control. Additionally, many of these processes are regulated by New Source Performance Standard Subpart LL for Metallic

⁹ EPA, Interpretation of Definition of Fugitive Emissions in Parts 70 and 71, <https://www.epa.gov/sites/default/files/2015-07/documents/fug-def.pdf>

Mineral Processing Facilities, which includes stack emissions limitations for dust control systems operated at metallic mineral processing operations (see 40 CFR 60.382(a)(1)); therefore, as discussed above, it is reasonable to assume that emissions from these processes can pass through a stack. The only notable process in the ore processing operation that is not regulated by New Source Performance Standard Subpart LL is material transfer points where the metallic mineral is being transferred to a stockpile, as identified in the definition of material transfer point in 40 CFR 60.381. For the Copper World Project, this is generally limited to stackers conveying processed oxide ore from the agglomerator to the oxide heap leach pad.

In the emissions calculations provided in Appendix F of the permit application, Copper World, Inc. developed calculations for each process step in the oxide ore processing and sulfide ore processing operations using emissions factors from the Compilation of Air Pollution Emission Factors (AP-42), specifically Chapter 11.24 for “Metallic Mineral Processing Plants” for ore processing operations and Chapter 13.2.4 for “Aggregate Handling and Storage Piles” for material transfer points, and the operating capacity of the associated equipment. The calculated emissions were followed by a pick-up (or capture) efficiency of 99%. This calculation procedure indicates that 99% of the emissions from these processes will be captured and vented to the control system, while 1% of these emissions remain uncaptured as process fugitive emissions. The controlled emissions are then accounted for as air pollution control equipment emissions utilizing manufacturer’s guarantees for particulate matter grain loading and equipment exhaust rates.

It is notable that when detailing particulate matter emissions factors for dust control systems under the ‘Part EF’ tab in the emissions calculations spreadsheets provided in Appendix F of the permit application, Copper World, Inc. indicates that manufacturer guarantees of 99.99% control had been provided; however, 99% was utilized to remain conservative. Additionally, in reviewing potential to emit calculations developed for mines in Arizona that implement similar capture and control systems, the Department noted that the Copper World Project was the only permitted mine accounting for these uncaptured process fugitive emissions, primarily due to these processes being operated within enclosures that are maintained under negative pressure in order to ensure maximum capture efficiency.

Nevertheless, based on the information provided in the permit application, the Department agrees that emissions sources identified as fugitive emissions sources under ore processing operations in the emissions calculations provided in Appendix F of the permit application are more appropriately characterized as non-fugitive sources, and has revised the technical support document to reflect this determination. The revised potential to emit totals for particulate matter and lead can be found in the table below:

Table 6: Copper World Project Revised Potential to Emit

Pollutant	Potential to Emit (tons per year)
PM	196.68
PM10	60.27
PM2.5	28.18
Lead	0.02

The Department notes that the potential to emit remains below the Class I major source threshold for particulate matter. As such, the Department cannot require Copper World, Inc. to obtain a Class I permit for the Copper World Project.

Comment 57: Several commenters stated that ADEQ must consider emissions of particulate matter from wind erosion of storage piles as non-fugitive emissions for the purposes of evaluating potential to emit for the Copper World Project.

ADEQ Response:

The Department disagrees with the assertion that emissions of particulate matter resulting from wind erosion from material storage piles were improperly categorized as fugitive emissions. As previously noted, fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Emissions of particulate matter from wind erosion result from the exposure of material storage piles in open air that are exposed to high wind speeds. While it may be feasible for relatively small storage piles in certain operations to be enclosed, the Department does not believe that the enclosure of certain storage piles in mining operations necessitates that all open material storage piles at mining operations to be considered non-fugitive sources.

Notably, wind erosion is consistently referred to as a fugitive source of emissions in documentation for developing emissions calculations by the Environmental Protection Agency. For instance, the Compilation of Air Pollution Emission Factors (AP-42) Chapter 13.2.5 for Industrial Wind Erosion is a subchapter of Chapter 13.2 for Fugitive Dust Sources. This is also consistent with the EPA New Source Review Manual (1990 Draft)¹⁰, where particulate matter emissions resulting from storage piles are categorized as fugitive emissions for non-categorical sources.

Additionally, the Department conducted a detailed review of mining permits issued in Arizona and throughout the United States, and further confirmed that standard practice for the evaluation of potential to emit

¹⁰ U.S. EPA. 1990 New Source Review Manual (Draft). <https://www.epa.gov/sites/default/files/2015-07/documents/1990wman.pdf>

resulting from wind erosion from storage piles is to classify these emissions as fugitive. As such, the Department believes it would be inappropriate to arbitrarily classify wind erosion emissions as non-fugitive in order to potentially trigger the requirement to obtain a Class I permit.

Comment 58: Several commenters stated that ADEQ must consider emissions of particulate matter from the loading and unloading of haul trucks as non-fugitive emissions for the purposes of evaluating potential to emit for the Copper World Project.

ADEQ Response:

The Department disagrees with the assertion that emissions of particulate matter resulting from the loading and unloading of material from haul trucks at the open material storage piles, waste rock storage areas, and within open-pit mines, identified in Appendix F of the permit application as Emission Unit IDs MN03a, MN03b, MN04a, MN04b, MN05a, and MN05b, should be classified as non-fugitive emissions. The Department does not believe that emissions of unloading and loading of material from haul trucks at variable locations within open-pit mines, at storage piles, and at waste rock storage facilities can reasonably be passed through a stack, chimney, vent, or other functionally equivalent opening. In conducting a detailed review of new and modified mining permits issued in the United States, the Department did not identify any instances where emissions of particulate matter resulting from the loading and unloading of haul trucks were classified as non-fugitive emissions. As such, the Department believes it would be inappropriate to arbitrarily classify these emissions as non-fugitive in order to potentially trigger the requirement to obtain a Class I permit.

Comment 59: Several commenters stated that ADEQ must consider emissions of particulate matter from wind erosion of tailings storage facilities as non-fugitive emissions for the purposes of evaluating potential to emit for the Copper World Project.

ADEQ Response:

The Department disagrees with the assertion that emissions of particulate matter resulting from wind erosion from the tailings storage facilities were inappropriately classified as fugitive emissions. In addition to the discussion of wind erosion from open storage piles above, the Department does not believe that it is reasonable, nor feasible, to divert intermittent emissions of wind erosion tailings storage facilities encompassing several hundred acres through a stack, chimney, vent, or other functionally equivalent opening. In conducting a detailed review of new and modified mining permits issued in the United States, the Department did not identify any instances where emissions of particulate matter resulting from wind erosion from tailings storage facilities were classified as non-fugitive emissions. As such, the Department believes it would be inappropriate to

arbitrarily classify these emissions as non-fugitive in order to potentially trigger the requirement to obtain a Class I permit.

Comment 60: Several commenters stated that the inclusion of the tailing storage facility identified in Hudbay, Inc. investor relations documents¹¹ as "Tailings Storage Facility - North" or "TSF-N" would result in the Copper World Project requiring a Class I permit.

ADEQ Response:

The Department disagrees with this comment. As discussed above, emissions of particulate matter resulting from wind erosions are evaluated as fugitive emissions, which are not accounted for in determining the potential to emit for non-categorical sources, such as copper mining operations. Therefore, for the purposes of determining the appropriate class of permit, the presence of additional tailings storage facilities, such as Tailings Storage Facility – North, is not a considered to be a factor as to whether the Copper World Project is required to obtain a Class I Permit.

In addition, as discussed below, this tailings storage facility was not identified in the permit application or air dispersion modeling report, therefore the issuance of this permit does not authorize construction and operation of the referenced Tailings Storage Facility – North.

Comment 61: Several commenters expressed concern that ADEQ's evaluation did not include emissions resulting from equipment failures.

ADEQ Response:

As previously discussed, the appropriate class of air quality permit is determined based on a stationary source's potential to emit, which is defined as the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. The evaluation of potential to emit, and, by extension, the determination of the applicable class of air quality permit, are based on normal operating conditions assuming compliance with the requirements of the permit and continuous operation of the stationary source. As such, potential to emit is not intended to account for malfunctions that may result in excess emissions.

Comment 62: The commenter requested that the Department provide a table clarifying regarding the differences in permit requirements for a source permitted under a Class I permit and a Class II permit.

ADEQ Response:

¹¹ Hudbay, Inc. 2023. Hudbay De-risks Copper World Phase I with Enhanced Pre-Feasibility Study. <https://hudsonminerals.com/investors/press-releases/press-release-details/2023/Hudbay-De-risks-Copper-World-Phase-I-with-Enhanced-Pre-Feasibility-Study/default.aspx>

The Department has developed the table below in order to provide a general overview of the primary differences between a Class I and Class II permit, in addition to procedures adopted into the Copper World Project air quality permit:

Table 7: Class I Permit vs. Class II Permit Requirements

	Class I Permit	Class II Permit	Copper World Project
Potential to Emit	Greater than or equal to 100 tpy	Less than 100 tpy	Less than 100 tpy
EPA 45-Day Review & Opportunity to Object to Permit Issuance	Yes	No	No
Title V Petition	Yes	No	No
Notification to Affected States	Yes	No	Coordination with Pima Department of Environmental Quality Air Quality Division
Emissions Inventory Submittal Frequency	Annual	Every 3 Years (unless requested)	Every 3 Years (to be requested annually)
Annual Emissions-Based Fees	Yes	No	No
Compliance Certification	Semiannual	Annual	Semiannual

The Department notes that the primary differences in Class I and Class II permitting are the permit processing procedures, such as the EPA 45-day review period and notification of affected states during the public participation period, and reporting frequencies for emissions inventories and compliance certifications. In general, a source will be subject to the same federal, state, and local air pollution control regulations regardless of whether it is covered under a class I or class II permit. The Department’s authority to implement monitoring, recordkeeping, reporting, and testing requirements is not dependent on whether the source obtains a class I or class II permit. In fact, synthetic minor sources, such as the Copper World Project, often adopt emissions standards and operating restrictions that are more stringent than the otherwise applicable requirements (such as New Source Performance Standards Subpart LL for Metallic Mineral Processing Plants) in order to reduce the potential to emit of the source below major source thresholds, which requires adopting emissions testing, monitoring, and reporting requirements in order to demonstrate continuous compliance with those standards.

With respect to the Copper World Project, the Department has implemented stringent emissions standards and air pollution control equipment requirements, along with extensive testing, continuous emissions monitoring, operating parameter monitoring, recordkeeping,

and reporting requirements in order ensure continuous compliance with the emissions standards and operating requirements in the permit. The Department has also required the development of fugitive dust control and tailings dust management plans in order to address concerns regarding fugitive dust emissions from the Copper World Project, which are subject to an annual review in order to ensure the plans remain effective. In an effort to further ensure that emissions from the Copper World are minimized, the Department has required Copper World, Inc. to operate PM10 and PM2.5 monitors near the boundary of the Copper World Project in areas identified with elevated concentrations by the ambient air impact analysis. As such, regardless of the Copper World Project being considered a class II source, the Department utilized its authority to the extent available to develop a stringent, practicably enforceable air quality permit for the Copper World Project.

K. COMPLIANCE AND ENFORCEMENT

Comment 63: The commenter expressed concern regarding the opening of a new copper mine in light of previous non-compliance and environmental impacts from nearby copper mines and other mining operations in Arizona.

ADEQ Response:

The Department is required to process permit application based on the presented operations, and cannot make licensing decisions based on historical impacts of mining operations, particularly those unrelated to the permit application under review. The Department has implemented robust measures to address concerns regarding the air quality impacts and develop a stringent permit for the Copper World Project, including, but not limited to: the adoption of stringent emissions standards and operating restrictions, extensive air pollution control equipment operating requirements, continuous emissions monitoring, operating parameter monitoring, compliance reporting, the development and annual review of fugitive dust control and tailings dust management plans, and ambient air quality monitoring near the property boundary of the Copper World Project. As such, the Department is confident that the measures adopted through permitting practices will result in minimizing the environmental impacts from the Copper World Project.

Comment 64: The commenter requested clarification on the compliance and enforcement tools available to the Department and the consequences for instances of non-compliance, including repeat non-compliance, with the requirements of the permit.

ADEQ Response:

The tools implemented by the Department vary significantly depending on the frequency, severity, and circumstances regarding non-compliance with respect to emissions standards, operating requirements, and compliance

demonstration requirements in the permit. The Department's recourse may range from informal enforcement actions requiring the Permittee to take corrective action to return to and demonstrate compliance for the requirements in question, to monetary penalties up to \$10,000 per day per violation, to revocation of the permit should the Department determine that the emissions standards and operating limitations presented in the permit application as manufacturer's guarantees are not truly achievable. Additional information regarding the Department's compliance and enforcement tools is available in ADEQ's [Compliance and Enforcement Handbook](#).

L. COPPER WORLD PROJECT OPERATIONS

Comment 65: The commenter requested clarification as to whether primary or secondary copper smelting will be conducted at the Copper World Project.

ADEQ Response:

The Copper World Project does not include primary or secondary copper smelting operations. Copper World, Inc. intends to utilize sulfuric acid leaching, solvent extraction, and electrowinning processes to produce copper cathode from oxide and sulfide copper ore, which bypasses the smelting and refining processes to produce cathode copper. The Copper World Project is also authorized to produce copper concentrate from sulfide ore, which may be shipped off-site for primary smelting.

Comment 66: The commenter requested clarification as to whether the Tailings Storage Facility identified in investor relations documents developed by Hudbay, Inc. for the Copper World Project as "Tailings Storage Facility – North" or "TSF-N" is authorized to be constructed in this air quality permit.

ADEQ Response:

Tailings Storage Facility – North or "TSF-N" has not been identified in the permit application and modeling report submitted to the Department by Copper World, Inc. for the Copper World Project. Therefore, construction and operation of TSF-N is not authorized by the issuance of this permit.

Comment 67: The commenter requested that the Department require Copper World, Inc. implement in-situ recovery rather than open-pit mining for the Copper World Project.

ADEQ Response:

The Department cannot require Copper World, Inc. to implement in-situ recovery rather than open-pit mining for the Copper World Project. The Department is required to evaluate permit applications based on the proposed operations. In addition, in-situ recovery is only feasible under

specific geological and hydrogeological conditions, which may not be the case for the Copper World Project.

M. CUMULATIVE IMPACTS

Comment 68: The commenter expressed concerns regarding the cumulative air quality impacts in nearby communities resulting from the operation of the Copper World Project in the area of two existing mining operations.

ADEQ Response:

Based on the Department's review of the ambient air impact analysis conducted by Copper World, Inc. in support of the Air Pollution Control Permit for the Copper World Project as required by the Arizona Minor New Source Review program, the Department has determined that air quality impacts resulting from the Copper World Project on the Green Valley area will be minimal. The air dispersion models conducted for PM10 and PM2.5 emissions demonstrated that the worst-case ambient concentration of these pollutants resulting from the operation of the Copper World Project were at, or very near, the background concentration utilized in the ambient air impact analysis in the Green Valley area. As such, the Department does not believe that cumulative air quality impacts from the Copper World Project and nearby mining operations in Green Valley are an area of concern with respect to attainment of the National Ambient Air Quality Standards. Ambient concentrations of PM10 and PM2.5 for the Green Valley Monitor are also discussed in Figure 23 above, which demonstrates that ambient concentrations in Green Valley are among the lowest in Pima County despite being in close proximity to active mining operations and tailings storage facilities.

N. ENFORCEABILITY

Comment 69: The commenter requested clarification regarding the meteorological data that will be used to demonstrate when windspeeds exceed thresholds identified in the permit.

ADEQ Response:

The Department intends for the on-site meteorological station to be used when evaluating windspeeds against thresholds identified in the air quality permit due to its location within the project site. The meteorological station is required to be maintained consistent with the Quality Assurance Project Plan reviewed and approved by the Department.

Comment 70: The commenter requested clarification as to how continuous compliance will be demonstrated for emissions limitations and how deviations from air pollution control equipment operating parameters will be evaluated by the Department.

ADEQ Response:

A common method for the demonstrating compliance with emissions limitations, particularly for particulate matter, is through the adoption of periodic performance testing requirements in order to demonstrate that the air pollution control equipment complies with the permitted emissions standards, operational requirements to further require that the associated air pollution control equipment is continuously operated within the manufacturer's specified operating parameters, monitoring requirements adopted to verify that the operating parameters are being maintained within the manufacturer's recommended operating range, and recordkeeping and reporting requirements to ensure that the Department has access to the necessary operating data. In the case of the Copper World Project, Copper World, Inc. is required to conduct periodic performance testing for all air pollution control equipment; maintain pressure drop of dust collection equipment and wet scrubbers, flow rate of scrubber solution to wet scrubbers, and power to the electrostatic precipitator within the manufacturer specified operating range at all times; monitor each of these operating parameters to ensure that the devices are operated consistent with the recommended operating ranges; and maintain records and submit periodic reports detailing the performance of air pollution control equipment and monitoring systems.

Comment 71: The commenter requested clarification of the timeframes over which emissions standards in the permit are required to demonstrate compliance.

ADEQ Response:

Copper World, Inc. is required to demonstrate continuous compliance with the emissions standards identified through the permit. Demonstrations of compliance range from the operation of continuous emissions monitoring systems for sulfur dioxide and nitrogen oxides from the sulfuric acid plant, to periodic performance testing and continuous operating parameter monitoring to evaluate emissions of particulate matter emitted from air pollution control equipment operated to control emissions from ore processing equipment. Copper World, Inc. is required to report deviations from these emissions standards within 2 days of their occurrence.

Comment 72: The commenter stated that the permit does not require sufficient monitoring for all emissions standards and operating limitations for the Copper World Project to ensure requirements are enforceable.

ADEQ Response:

The Department disagrees that the permit fails to require sufficient compliance demonstration procedures for all emissions standards and operating limitations to ensure that the requirements are practically enforceable. As documented in Table 5 of the Technical Support Document, each emissions standard and operating limitation has

corresponding monitoring, recordkeeping, reporting, and testing requirements, as appropriate, adopted in order to ensure continuous compliance with each standard.

Comment 73: The commenter expressed concern that continuous emissions monitoring systems were not required for all sources of air pollution for the Copper World Project.

ADEQ Response:

The Department has required continuous emissions monitoring systems be operated for sulfur dioxide and nitrogen oxide emissions from the sulfuric acid plant. Due to concerns regarding accuracy and reliability for continuous emissions monitoring systems for particulate matter, the Department has required Copper World, Inc. to demonstrate continuous compliance with the emissions standards for particulate matter emissions limitations and air pollution control equipment requirements through periodic performance testing, operating parameter monitoring, and appropriate monitor, recordkeeping, and reporting requirements.

Comment 74: The commenter stated that manufacturer's specifications for operating parameters of air pollution control equipment should be directly implemented into the permit as compliance demonstration requirements.

ADEQ Response:

The Department has required Copper World, Inc. to maintain documentation of manufacturer's specifications on-site for all equipment, including air pollution control equipment, and make these records available to the Department upon request. The Copper World Project is required to ensure that all air pollution control equipment is operated consistent with manufacturer's specifications, including the operating parameters for parameters indicative of performance of the air pollution control equipment, such as pressure drop across air pollution control equipment. These parameters will be monitored by the Copper World, Inc. to ensure that air pollution control equipment is continuously operated consistent with manufacturer's specifications, and that any deviations from these operating parameters are rapidly addressed.

O. EXPLOSIVE BLASTING

Comment 75: The commenter expressed concern that the permit does not establish permit conditions addressing factors that may influence emissions associated with explosive blasting, including sleep time, wicking, ammonium nitrate dissolution, and borehole diameter.

ADEQ Response:

While the Department acknowledges that there are several factors which may emissions associated with explosive blasting from the operation, the Department does not believe that consideration of factors outside of normal operating procedures such as extended sleep time, wicking, and dissolution of ammonium nitrate is appropriate in the context of an ambient air impact analysis. Wicking and ammonium nitrate dissolution are functions of extended sleep time and the presence of moisture in the material being blasted, each of which result in unfavorable conditions for blasting that are generally avoided when conducting blasting operations at open-pit mines. Blasting operations conducted at mines are intended to maximize the efficiency of the operation, including designing blast patterns to minimize usage of ammonium nitrate and fuel oil, minimizing sleep time to the extent practicable with safety considerations factored, and addressing moisture through the use of emulsions. As such, the Department maintains that it took appropriate measures in the permit to address emissions associated with blasting by restricting factors such as time of day, usage of ammonium nitrate and fuel oil, and blasting surface area.

Comment 76: The commenter expressed concern regarding the emissions of pollutants resulting from explosive blasting in open-pit mining operations.

ADEQ Response:

While emissions from explosive blasting are considered as fugitive emissions that are not evaluated for the purposes of potential to emit, emissions associated with blasting were evaluated in the ambient air impact assessment for the Copper World Project. The evaluation of explosive blasting in the ambient air impact assessment resulted in extensive operating restrictions associated with explosive blasting being adopted in the permit in order to ensure that operations are consistent with the ambient air impact assessment, including, but not limited to, limitations to time of day that blasting can occur, allowable amount of ammonium nitrate and fuel oil solution per blast, and maximum area to be blasted over. Emissions associated with blasting will also be subject to visible emissions requirements outlined in the Pima County Code, including requirements that visible emissions associated with explosive blasting remain within the property boundaries of the Copper World Project.

Comment 77: The commenter inquired as to how emissions from explosive blasting are monitored.

ADEQ Response:

Several challenges exist regarding the practicality of measuring actual emissions from mining-scale explosive blasting, such as the intermittent nature of blasting emissions, impact of wind conditions on dispersion of emissions, and infeasibility of enclosures to facilitate direct emissions

testing. Due to these factors, the Department relies operational restrictions within the permit, with monitoring and recordkeeping requirements adopted to ensure that explosive blasting operations are conducted consistent with the operational restrictions outlined in the permit.

P. FUGITIVE DUST CONTROL METHODS

Comment 78: The commenter inquired on what dust control measures will be implemented by the Copper World Project.

ADEQ Response:

Copper World, Inc. has been required to develop for the Department's approval and implement a fugitive dust control plan and tailings management plan in order to effectively minimize emissions of fugitive dust from operations at the Copper World Project. Proposed fugitive dust control measures include the application of chemical dust suppressants and water application. These plans will be reviewed on an annual basis to evaluate effectiveness of the plans and ensure that best practices are implemented in the control of fugitive dust from the Copper World Project. Factors evaluated in the annual review include compliance inspection results, validated complaints, and monitoring data from PM10 and PM2.5 monitors located near the property boundary of the Copper World Project.

Comment 79: The commenter expressed concern that the dust control measures employed by Copper World, Inc. for the Copper World Project will be insufficient to effectively control dust.

ADEQ Response:

The Department disagrees that the proposed fugitive dust control measures for the Copper World Project are insufficient to effectively control fugitive dust. The Department has evaluated the fugitive dust control plan and tailings dust management plans against similar plans submitted to the Department, in addition to plans submitted to the Pima County Department of Environmental Quality's Air Quality Division, to further verify that the proposed fugitive dust control plans are thorough and appropriately address sources of fugitive dust from the Copper World Project. The Department has also required that the plans be reviewed on an annual basis to evaluate effectiveness of the plans and ensure that best practices are implemented in the control of fugitive dust from the Copper World Project. Factors evaluated in the annual review include compliance inspection results, validated complaints, and monitoring data from PM10 and PM2.5 monitors located near the property boundary of the Copper World Project.

Q. LEGAL AUTHORITY

Comment 80: The commenter requested clarification as to the Arizona Department of Environmental Qualities authority to enforce the Pima County Code in the Copper World Project Air Pollution Control Permit.

ADEQ Response:

On August 2, 2022, the Arizona Department of Environmental Quality asserted jurisdiction for the Copper World Project in accordance with A.R.S. § 49-402.B, which includes review, issuance, administration, and enforcement of all air pollution control permits issued for the Copper World Project. A.R.S. § 49-402.D states: “a permit issued to a state regulated source shall include the emission standard or standard of performance adopted pursuant to A.R.S. § 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.” The Copper World Project is within the boundaries of Pima County and is subject to standards of performance adopted by Pima County in accordance with A.R.S. § 49-479 that are more stringent than those adopted by the director and are applicable to the Copper World Project; therefore, requirements from the Pima County Code are required to be in the permit and, by extension, enforced by ADEQ.

Comment 81: The commenter requested clarification as to whether there are instances where a fugitive dust activity permit would be required from the Air Quality Division of the Pima County Department of Environmental Quality.

ADEQ Response:

If operations requiring a fugitive dust activity permit related to the Copper World Project take place outside of the property that the Arizona Department of Environmental Quality asserted jurisdiction of the Copper World over, then it is possible that Copper World, Inc, would be required to obtain a fugitive dust activity permit from the Pima County Department of Environmental Quality.

Comment 82: The commenter requests clarification on the permitting jurisdiction that will be responsible for compliance and enforcement with National Emissions Standard for Hazardous Air Pollutants (NESHAP) Subpart M for Asbestos.

ADEQ Response:

The Department has asserted jurisdiction over all air quality permitting and compliance activities within the boundaries of the Copper World Project; therefore, compliance and enforcement with respect to the Asbestos NESHAP associated with the Copper World Project will also be the Department’s responsibility.

Comment 83: The commenter requests that ADEQ change air pollution control regulations to allow for more a protective permitting program and the denial of permits.

ADEQ Response:

The objective of the air permitting program is to apply all relevant state, federal and local regulations to develop a comprehensive air permit that is protective of public health. The Department has determined that its permit is both environmentally protective and legally defensible based on the permitting rules that are currently in place. The Department is not legally authorized to change permitting regulations in the context of processing a permit application.

R. LIGHT AND NOISE POLLUTION

Comment 84: The commenter expressed concern regarding the light pollution resulting from operation of the Copper World Project.

ADEQ Response:

The Department does not have the legal authority to regulate light pollution in the air quality permit for the Copper World Project.

Comment 85: The commenter expressed concern regarding the noise pollution resulting from operation of the Copper World Project.

ADEQ Response:

The Department does not have the legal authority to regulate noise pollution in the air quality permit for the Copper World Project.

S. LOCATION

Comment 86: The commenter expressed concern regarding the proximity of the Copper World Project to nearby communities, schools, and the Tucson metropolitan area.

ADEQ Response:

The Air Pollution Control Permitting program's authority to regulate the location of a new stationary source is limited to the evaluation of the source's impact on air quality in areas accessible to the public through air dispersion modeling. The air dispersion model considers factors such as the property boundary of the operation, sources of emissions, local meteorological conditions, and nearby topography in order to evaluate the air quality impacts resulting from the operation of the source. The modeled impacts are summed with the background concentration of the pollutant in question that is determined to be representative of the area in order to compare against the applicable National Ambient Air Quality Standard. If

the maximum concentrations are demonstrated to be below the National Ambient Air Quality Standards while following the requirements of Appendix W to 40 CFR 51 and the ADEQ Air Dispersion Modeling Guidelines, the Department is required to issue the permit.

Comment 87: The commenter expressed concern regarding the impact of a new copper mine on nearby property values.

ADEQ Response:

The Department's Air Pollution Control Permitting program regulates the discharge of air pollutants from stationary sources. In accordance with A.R.S. § 41-1030, the Department must make licensing decisions based on Title 49 of the A.R.S. and Title 18, Chapter 2 of the A.A.C. As such, the Department does not have the legal authority to consider socioeconomic impacts when taking final action on a permit application.

T. METALS IN PARTICULATE MATTER

Comment 88: The commenter expressed concern that the emissions of particulate matter containing lead from the Copper World Project would result in an exceedance of the National Ambient Air Quality Standard for lead.

ADEQ Response:

The potential to emit for lead from the stationary sources at the Copper World Project is below the permitting exemption threshold, therefore the Copper World Project does not trigger the requirements of New Source Review for lead. As such, Department does not have the legal authority to require Copper World, Inc. to develop an ambient air impact assessment to demonstrate that emissions from the Copper World Project will not interfere with attainment of the National Ambient Air Quality Standard for lead in areas accessible to the public.

In order to address concerns raised by community members regarding the impacts of the Copper World Project on attainment of the NAAQS for lead, the Department conducted a supplement modeling analysis to estimate the maximum ambient concentrations of lead at the fenceline of the Copper World Project and in nearby communities, including Santa Rita Foothills, Sycamore Canyon, Ocotillo Preserve, and Quail Creek. The NAAQS for lead is based on a 3-month rolling average. In order to evaluate lead impacts, the Department first evaluated the maximum monthly average concentrations for PM₁₀, and then applied a conservative ratio of Lead-to-PM₁₀ to estimate the maximum monthly ambient concentration of lead. This ratio was conservatively based on approximately double the lead content of ore at the Copper World Project.

The maximum ambient concentrations of lead and NAAQS for lead are presented in Table 8 below:

Table 8: Evaluation of Ambient Lead Impacts

Receptor Locations	Maximum Monthly Average Concentration for PM10 ($\mu\text{g}/\text{m}^3$)	Pb-to-PM10 Ratio	Maximum Monthly Average Concentration for Pb ($\mu\text{g}/\text{m}^3$)	Lead NAAQS ($\mu\text{g}/\text{m}^3$, 3-Month Rolling)
Fenceline Fenceline	65	0.05%	0.03027	0.15
Nearby Communities Nearby Communities	1.8	0.05%	0.00084	
Copper Ridge Elemental School	0.8	0.05%	0.00037	

As shown in the table above, the maximum monthly estimated lead impacts at the fenceline of the Copper World Project are significantly below the 3-month rolling average NAAQS for lead of $0.15 \mu\text{g}/\text{m}^3$. In addition, the maximum monthly estimated impacts from lead on nearby communities are considered to be negligible.

Comment 89: The commenter expressed concern regarding the presence of heavy metals in particulate matter emissions associated with the Copper World Project.

ADEQ Response:

Unless the stationary source is a major source of hazardous air pollutants, the Department has limited authority with respect to the regulation of the emission of metal hazardous air pollutants contained in particulate matter emitted by the Copper World Project. Aside from lead, the Environmental Protection Agency has not developed ambient air quality standards for metal hazardous air pollutants contained in particulate matter, such as manganese or arsenic. As discussed above, the Department does not have authority to require an ambient air impact analysis for lead emissions from the Copper World Project due to the Copper World Project’s potential to emit for lead being below the permitting exemption threshold identified in A.A.C. R18-2-101(101).

Comment 90: The commenter expressed concern regarding the potential for lead contamination resulting from exposure to particulate matter containing lead in the workplace.

ADEQ Response:

The Department does not have the legal authority to regulate workplace safety in its air quality permitting program. The focus of the air permitting

program is ambient air and is designed to be protective of public health beyond the property boundary.

U. OPPOSITION

Comment 91: The commenter objects to issuance of the Copper World Project Air Quality Permit.

ADEQ Response:

The Department acknowledges comments requesting the Arizona Department of Environmental Quality deny the permit application for the Copper World Project.

The Department is required under A.R.S. § 41-1030 to make licensing decisions based on the applicable air quality permitting programs identified in Title 49 of the A.R.S. and Title 18, Chapter 2 of the A.A.C. The Department's review has verified that the permit application for the Copper World Project meets the applicable legal requirements; therefore, the Department is required by A.R.S. § 41-1030 to issue the Air Pollution Control Permit for the Copper World Project.

Comment 92: The commenter expressed concern regarding the impacts of the Copper World Project on wildlife, scenery, recreation, and tourism in the Santa Rita Mountains.

ADEQ Response:

The Arizona Department of Environmental Quality's Air Pollution Control Permitting program does not have legal authority to evaluate the impacts of a stationary source on wildlife, scenery, recreation, and tourism beyond the impacts of that source on the attainment of the National Ambient Air Quality Standards. In accordance with A.R.S. § 41-1030, the Department must make licensing decisions on air permit applications based on the requirements authorized under Title 49 of the A.R.S. and Title 18, Chapter 2 of the A.A.C.

While the Air Pollution Control Permit does not directly regulate these concerns, it is notable that the permit is intended to be protective of members of the public partaking in recreation and tourist activities in the Santa Rita Mountains through the demonstration that the National Ambient Air Quality Standards will be attained in all areas accessible to the public through the required ambient air impact analysis. It is also important to note that the National Ambient Air Quality Standards include primary and secondary air quality standards, with secondary standards being intended to be protective of the health of wildlife.

V. PUBLIC HEALTH

Comment 93: The commenter expressed concern regarding the public health impacts of air pollution resulting from the Copper World Project.

ADEQ Response:

As required by the Arizona Minor New Source Review program, Copper World, Inc. developed an ambient air impact assessment in order to demonstrate that emissions from stationary sources operated at the Copper World Project would not interfere with the attainment of the National Ambient Air Quality Standards for particulate matter with aerodynamic diameter less than 10 microns (PM10), particulate matter with aerodynamic diameter less than 2.5 microns (PM2.5), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and ozone (O₃). The National Ambient Air Quality Standards are standards for the concentration of PM10, PM2.5, NO₂, SO₂, carbon monoxide (CO), lead, and ozone in ambient air that are developed and updated by the EPA. The Primary National Ambient Air Quality Standards are specifically developed to be protective of public health, including sensitive populations such as children, the elderly, and those with respiratory illnesses. The ambient air impact analysis reviewed by the Department demonstrated that the emissions from stationary sources at the Copper World Project will not interfere with attainment of the NAAQS in areas accessible to the public. This analysis demonstrated that maximum ambient concentrations occur near the property line of the Copper World Project, with maximum ambient concentrations decreasing significantly as distance from the Copper World Project increases. The Department also notes that maximum ambient concentrations for all pollutants were at, or near, background concentrations for the applicable pollutants in the nearby communities of Corona de Tucson and Green Valley.

In conclusion, through the evaluation of the ambient air impact assessment and development of a legally enforceable operating permit, the Department has addressed concerns regarding public health resulting from air pollution associated with the Copper World Project to the extent authorized under the Department's air quality permitting program and the Clean Air Act.

Comment 94: The commenter expressed concern regarding the potential for acquiring valley fever as a result of particulate matter emissions resulting from the operation of the Copper World Project.

ADEQ Response:

Copper World, Inc. has been required to implement stringent dust control measures for all operations at the Copper World Project, ranging from the operation of dust collection and control systems for processing operations to application of dust suppressants and water to fugitive dust sources in order to minimize the emissions of particulate matter emissions resulting from the operation of the Copper World Project. The Department also

notes that spores associated with valley fever tend to be near the surface of the soil, while a significant component of the particulate matter emissions associated with the Copper World Project are associated with material originating from open-pit mines from well below the surface, further minimizing the potential for contracting valley fever from operations associated with the Copper World Project.

Comment 95: The commenter stated that the proposed permit is not protective of workers at the Copper World Project.

ADEQ Response:

The Department does not have legal authority to regulate workplace safety.

W. SAGUARO NATIONAL PARK AND REGIONAL HAZE PLANNING

Comment 96: The commenter inquired as to whether the Department had considered emissions from the Copper World Project in planning for Regional Haze State Implementation Plan development.

ADEQ Response:

The Department did not consider emissions from the Copper World Project in development of the 2018-2028 Regional Haze State Implementation Plan.

Comment 97: The commenter expressed concern regarding the impacts of air pollution associated with the Copper World Project on the Saguaro National Park.

ADEQ Response:

Due to the low release height of sources of emissions at the Copper World Project resulting in the dispersion of pollutants to occur primarily near the property boundary of the Copper World Project, the Department does not anticipate that emissions resulting from the operation of the Copper World Project will result in the impairment of visibility at the Saguaro National Park.

To further demonstrate this, the Department obtained receptor data for Saguaro National Park from the National Park Service website¹² and conducted a model run for PM10. The results indicate that the maximum 24-hour PM10 impact from the Copper World Project on Saguaro National Park is 1.15 $\mu\text{g}/\text{m}^3$, which is significantly below the significant impact level (SIL) of 5 $\mu\text{g}/\text{m}^3$. Therefore, it is concluded that emissions resulting from the operation of the Copper World Project are unlikely to impact the air quality at Saguaro National Park.

¹² <https://irma.nps.gov/DataStore/Reference/Profile/2249830>

X. SANTA RITA ROAD

Comment 98: The commenter expressed concern regarding the impacts of particulate matter emissions resulting from increased vehicle traffic on the unpaved section of Santa Rita Road associated with the Copper World Project, including concerns that the increased emissions may result in ambient concentrations of particulate matter with aerodynamic diameter less than 10 microns to exceed the National Ambient Air Quality Standards in nearby communities.

ADEQ Response:

The Department acknowledges concerns regarding the impact of fugitive dust emissions resulting from increased vehicle traffic associated with the Copper World Project on the unpaved section of Santa Rita Road used to access the site.

In accordance with A.A.C. R18-2-334.C.2, the ambient air quality assessment the source is required to demonstrate that emissions from the source will not interfere with attainment or maintenance of the national ambient air quality standard. In order for Santa Rita Road to be considered as part of the stationary source (the Copper World Project), the road must be: (1) belonging to the same industrial grouping, (2) contiguous or adjacent to the Copper World Project, and (3) under common control of Copper World, Inc.. Santa Rita Road cannot be considered to be under common control of Copper World, Inc., therefore the Department cannot evaluate these emissions as part of the Copper World Project. As such, the Arizona Minor New Source review program is not authorized to evaluate emissions resulting from increased vehicle traffic associated with the Copper World Project in the ambient air quality assessment required by the Arizona Minor New Source Review program. Therefore, in accordance with A.R.S. § 41-1030, the Department cannot consider emissions from Santa Rita Road in taking final action on the Air Pollution Control Permit for the Copper World Project.

Despite this legal restriction, the Department has actively worked with Copper World, Inc. in order to address concerns raised regarding fugitive dust control on the unpaved portion of Santa Rita Road. At this time, the Department is aware that a Special Land Use Permit has been obtained by Copper World, Inc. authorizing dust control and road maintenance on this section of Santa Rita Road. The Department will continue to coordinate with the appropriate parties to ensure that these concerns have been addressed.

Comment 99: The commenter requested that Copper World develop a dust mitigation plan addressing fugitive dust emissions from vehicle traffic on the unpaved portion of Santa Rita Road leading to the site of the Copper World Project.

ADEQ Response:

The Department does not have legal authority to require Copper World, Inc. to develop a dust mitigation plan for increased traffic along the unpaved section of Santa Rita Road leading to the Copper World Project. The Department is aware of concerns regarding fugitive dust from Santa Rita Road, supports efforts to control fugitive dust from Santa Rita Road resulting from the Copper World Project, and has engaged with Copper World, Inc. on identifying solutions to these concerns. These solutions include Copper World, Inc.'s ongoing work to obtain authorization to conduct road maintenance and dust control on Santa Rita Road, including obtaining a Special Land Use Permit for this operation. The Department is committed to coordinating with all appropriate entities to help ensure that all concerns regarding fugitive dust from Santa Rita Road are addressed.

Comment 100: The commenter inquired as to why Copper World, Inc. has not indicated that they will pave Santa Rita Road to reduce dust resulting from increased traffic associated with the operation of the Copper World Project.

ADEQ Response:

Copper World, Inc. does not own the land associated with the unpaved section of Santa Rita Road that leads to the Copper World Project, therefore they do not have the legal authority to pave the road. While the Department is aware that Copper World, Inc. has engaged with obtaining and Special Land Use Permit in order to obtain authorization to implement dust control methods on Santa Rita Road, the Department does not anticipate that this permit will provide the legal authority to pave the roadway. In addition, as previously discussed, the Department does not have authority to evaluate emissions occurring outside of the Copper World Project in minor new source review permitting.

Comment 101: The commenter stated that Copper World, Inc.'s proposal to utilize Santa Rita Road for mining activities contradicts statements made in the Environmental Impact Assessment and Certificate of Environmental Compatibility processes for the Rosemont Copper Project and Copper World Project.

ADEQ Response:

The Environmental Impact Assessment required by the U.S. Forest Service and Certificate of Environmental Compatibility required by the Arizona Corporation Commission are separate from the Department's Air Pollution Control Permitting program. The Department is not involved in these processes and cannot opine on the contradictory information provided to support the processes. Copper World, Inc. is required to construct and operate the Copper World Project consistent with the requirements of the air pollution control permit and the permit application.

Comment 102: The commenter stated that a new Environmental Impact Statement and Certificate of Environmental Compatibility are required to evaluate changes between the Rosemont Copper Project and Copper World Project.

ADEQ Response:

The Environmental Impact Assessment required by the U.S. Forest Service and Certificate of Environmental Compatibility required by the Arizona Corporation Commission are separate from the Department's air quality permitting Air Pollution Control Permitting program. The Department cannot opine on whether the discussed changes to the proposed operations require an additional Environmental Impact Statement or Certificate of Environmental Capability.

Comment 103: The commenter expressed concern regarding the legality of the Special Land Use Permit obtained by Copper World, Inc. to implement dust control and road maintenance measures on the unpaved portion of Santa Rita Road.

ADEQ Response:

The Special Land Use Permit obtained by Copper World, Inc. to implement dust control and road maintenance measures on the unpaved portion of Santa Rita Road is separate from the Department's air quality permitting program. While the Department supports efforts taken by Copper World, Inc. to address concerns raised regarding fugitive dust on the unpaved portion of Santa Rita Road resulting from increased vehicle traffic related to the construction and operation of the Copper World Project, the Department cannot opine on this process to obtain this permit.

The Department also re-iterates that the air quality permitting program does not have legal authority to evaluate the ambient air impact of emissions associated with the Copper World Project that occur outside of the boundaries of the source in making licensing decisions, including fugitive dust emissions resulting from increased traffic on Santa Rita Road that is associated with the Copper World Project.

Comment 104: The commenter expressed concern that air quality impacts resulting from increased traffic on Santa Rita Road were not evaluated in the air quality permitting process for the Copper World Project.

ADEQ Response:

As previously discussed, the Arizona Department of Environmental Quality's Minor New Source Review permitting program is only authorized to evaluate emissions associated with the Copper World Project that occur in areas under common control of Copper World, Inc. As such, the Department does not have legal authority to consider secondary emissions, such as emissions resulting from increased vehicle traffic on

Santa Rita Road resulting from the operation of the Copper World Project, in the ambient air impact assessment.

Comment 105: The commenter requested that ADEQ required the Copper World Project to utilize access roads East of the ridgeline of the Santa Rita Mountains rather than Santa Rita Road for all transportation purposes.

ADEQ Response:

The Department does not have the legal authority to dictate the travel routes used by the Copper World, Inc. to transport product from the Copper World Project.

Y. SELF-MONITORING AND REPORTING REQUIREMENTS

Comment 106: The commenter expressed concern that self-reporting requirements are insufficient to ensure that the Copper World Project continuously applies with the requirements of the permit.

ADEQ Response:

The Department disagrees that self-reporting requirements are insufficient to ensure continuous compliance of the requirements of the Air Pollution Control Permit for the Copper World Project. The Department has implemented extensive testing, monitoring, recordkeeping, and reporting requirements in order to ensure that the Department is capable of verifying that the Copper World Project has continuously complied with the requirements of the permit despite not having a continuous presence at the operation. The Department also conducts unannounced inspections at least annually, and may conduct additional compliance inspections resulting from each complaint received by the Department that alleges a violation of the requirements of the permit. As such, the Department believes that the appropriate requirements have been adopted in the permit to ensure continuous compliance with the operational requirements of the permit.

Comment 107: The commenter inquired as to why Copper World is conducting air quality monitoring on-site rather than the Department.

ADEQ Response:

The Department has required that Copper World, Inc. install, operate, maintain, and calibrate PM10 and PM2.5 air quality monitors near the boundary of the Copper World Project in an area identified by the air dispersion model as having elevated concentrations. The Department has required that these monitors be operated and maintained consistent with the Quality Assurance Project Plans submitted to and approved by the Department. These monitors will be operated consistent with EPA-approved procedures for obtaining air quality data for regulatory purposes. All records associated with these monitors must be made available to the

Director upon request, and monitoring data will be submitted to the Department periodically.

Z. SPECIFIC PERMIT CONDITIONS

Comment 108: The commenters requested clarification as to how the term "mined" is evaluated for the purposes of compliance with Condition II.B.2.a of Attachment "B" of the permit and how the quantity of ore will be measured.

ADEQ Response:

The Department has updated the language of Air Quality Control Permit No. 96659 for the Copper World Project to clarify that the throughput limitation for material mined shall be evaluated as the quantity of ore or waste rock loaded into haul trucks, as measured by certified scales.

Comment 109: The commenters indicated that requiring quantitative monitoring as to whether there is the appearance of opacity is vague, prone to inconsistency between observers, and not sufficient for periodic monitoring.

ADEQ Response:

The permit requires that all instantaneous operations be conducted by an EPA Reference Method 9 Certified Observer trained in identifying the appearance of opacity from visible emissions. The instantaneous observations, including positioning of the observer, are required to be conducted consistent with the procedures of EPA Reference Method 9.

Comment 110: The commenters requested that the permit require an EPA Method 9 certified observer be on-site at all times.

ADEQ Response:

The Department has updated the language of Condition II.A of Air Quality Control Permit No. 96659 for the Copper World Project to require that an EPA Reference Method 9 Certified Observer be on-site at all times.

Comment 111: The commenters requested that provisions for the monitoring of uncombined water be included in the permit.

ADEQ Response:

It is unclear how the commenter proposes to monitor uncombined water from a plume of visible emissions using approved EPA Reference Methods. The purpose of this provision is to ensure that water is not inappropriately identified as fugitive dust (or other pollutants) in visible emissions from plumes that contain high moisture content, as may be the case for emissions points controlled by fogging systems and wet scrubbers.

The Department also notes that ADEQ inspectors utilize the ALT-082 visible emissions observation method, which employs cameras and video processing technology to allow for the identification and separation of water droplets from particulate matter in determining the opacity of visible emissions. This method is an alternative approach approved by EPA from the standard use of EPA Reference Method 9. As such, ADEQ cannot require this alternative approach to be utilized by the Permittee in place of EPA Reference Method 9.

Comment 112: The commenter stated that the permit must include numerical emissions limitations derived from the Process Weight Rate Equations identified in Conditions III.C.2.a, III.D.2.a, and IV.B.1.b of Attachment "B" of the permit.

ADEQ Response:

The Process Weight Rate Equations are the maximum allowable particulate matter emissions from a process source. Under the Pima County Code, a process source with a process weight rate of 4,600 tons per hour is allowed a maximum of approximately 66.73 pounds of particulate matter in an hour, which significantly exceeds emissions allowable under the permit for the Copper World Project.

As such, the Department disagrees that it is necessary to identify numerical limitations associated with the process weight rate equations identified in Conditions III.C.2.a, III.D.2.a, and IV.B.1.b are required to be included in the permit. The Department also notes it is standard practice for process weight rate equations to be identified in this manner in air quality permits.

Comment 113: The commenter stated that process weight rate must be defined under the permit consistent with the Pima County Code.

ADEQ Response:

The Department has revisited the permit as necessary to ensure that permit conditions associated with the process weight rate equation include definitions consistent with the Pima County Code

Comment 114: The commenter stated that the permit must have periodic monitoring requirements to ensure compliance with the maximum allowable emission limitations identified by the Process Weight Rate equations.

ADEQ Response:

By demonstration compliance with the voluntary emissions limitations adopted in the permit, the Department believes that the Copper World Project suitably demonstrate compliance with the emissions standards calculated by the Process Weight Rate equations.

Comment 115: The commenter identified inconsistencies in the fugitive dust opacity limitations between the proposed permit and technical support document.

ADEQ Response:

The Department has corrected the referenced error in the final technical support document.

Comment 116: The commenter requests that the definition of Control Officer be referenced in the Definitions section of the draft permit.

ADEQ Response:

The Department erroneously left references to the Control Officer in regulations from the Pima County Code. Due to the Department's assertion of jurisdiction over the Copper World Project, these references have been updated from "Control Officer" to "Director."

Comment 117: The commenter requests that ADEQ address inconsistencies with the use of "should," "must," "shall," and "may" in permit conditions throughout the proposed permit.

ADEQ Response:

It is unclear which specific conditions are being referred to as inconsistently using the referenced terms. The Department has conducted an additional review of all applicable requirements to verify that the use of "should," "must," "shall," and "may" are consistent with the language of the regulations and ADEQ's air quality permitting practices.

Comment 118: The commenter requests that ADEQ directly incorporate requirements from the New Source Performance Standards General Provisions referenced throughout the permit in the body of the permit.

ADEQ Response:

The Department has incorporated requirements applicable to the Copper World Project identified in the General Provisions of the New Source Performance Standards under 40 CFR 60 Subpart A as appropriate. The Department's preference is to reference provisions associated with performance testing, while directly incorporating applicable monitoring, recordkeeping, and reporting requirements from the General Provisions, as currently draft.

Comment 119: The commenter requested that the Department implement opacity limitations, such as restricting to 0%, to order to further demonstrate continuous compliance with the voluntary particulate matter emissions limitations.

ADEQ Response:

The Department's legal authority to implement opacity limitations through voluntarily-accepted emissions limitations or Reasonably Available Control Technology determinations is unclear. As such, supplemental opacity limitations have not been adopted. In order to address concerns regarding the potential presence of visible emissions from air pollution control equipment, the Department has implemented monitoring requirements which require Copper World, Inc. to conduct quarterly observations of air pollution control equipment in accordance with EPA Reference Method 22 on a quarterly basis. If visible emissions are observed from these operations, Copper World, Inc. is required to rapidly implement corrective action to address the presence of visible emissions. See Condition III.A.3.d of Attachment "B" of the permit.

Comment 120: The commenter requested that the property line visible emissions standard be applied to blasting operations.

ADEQ Response:

The property line visibility limiting standard identified in the Pima County Code is identified under Facility-Wide Requirements in Condition I of Attachment "B" for the Copper World Project. All visible emissions from the Copper World Project, including emissions from blasting, will be subject to the property line visible emissions visibility limiting standard.

Comment 121: The commenter requested that the Department clarify the specific equipment subject to each section of the permit in the Applicability section with a brief description of the processes.

ADEQ Response:

In order to avoid having multiple duplicate equipment lists to maintain through the permit, the Department has addressed this comment by adding a column to the Equipment List in Attachment "C" of the permit to specifically identify which section of the permit is applicable to each emissions unit.

Comment 122: The commenter requested clarification regarding the classification of air pollution control equipment under the new source review permitting program.

ADEQ Response:

The air pollution control equipment was adopted to avoid classification as a Class I major source in accordance with A.A.C. R18-2-306.01.A. The Copper World Project is subject to Minor New Source Review, and opted to conduct a refined ambient air impact assessment in order to satisfy the requirements of Minor New Source Review. A.A.C. R18-2-334.B.2.c requires that all emissions limitations and controls considered in the

ambient air impact analysis be enforceable in the permit, which is achieved by adopting emissions standards in order to avoid classification as a Class I major source.

The air pollution control technology requirements applicable to Minor New Source Review is Reasonably Available Control Technology, therefore any air pollution control requirements adopted in order to demonstrate that the Copper World Project will not interfere with attainment of the National Ambient Air Quality Standards would be considered RACT. The Department primarily implemented conditions associated with Minor New Source Review for sources of fugitive emissions due to their significant role in demonstrating that emissions from the Copper World Project will not interfere with attainment of the NAAQS in areas accessible to the public, the lack of consideration for fugitive emissions when determining the potential to emit for a copper mining operations, and the voluntary emissions standards and air pollution control equipment requirements adopted by the applicant to avoid classification as a Class I source.

Comment 123: The commenter requested that the Department clarify whether continuous emissions monitoring systems (CEMS) will be in place and for which pollutants CEMS will be utilized.

ADEQ Response:

Continuous emissions monitoring systems will be required for the measurement of sulfur dioxide and nitrogen oxides at the exhaust stack of the sulfuric acid plant.

Comment 124: The commenter requested clarification on how missing data from continuous emissions monitoring systems is accounted for in demonstrating compliance with sulfuric acid plant emissions limitations.

ADEQ Response:

Consistent with the requirements in the General Provisions for the New Source Performance Standards, the Department will require Copper World, Inc. to submit Excess Emissions and Monitoring System Performance Reports detailing periods of excess emissions and monitor downtime. The Department will evaluate instances and frequency of monitor downtime on a case-by-case basis, and will act as necessary to ensure that the downtime for the continuous emissions monitoring systems is minimized.

Comment 125: The commenter requested that the permit shields for each section be combined into an overall permit shield section.

ADEQ Response:

The Department's preference is to group permit shields by processes regulated, as currently drafted. This approach is consistent with previous permitting actions by the Department.

AA. SULFURIC ACID PLANT

Comment 126: The commenter expressed concern that the sulfuric acid plant proposed by the Copper World Project will produce sulfuric acid for sale rather than on-site use and inquired as to whether the Department had included the associated emissions in their analysis.

ADEQ Response:

The Department required that Copper World, Inc. account for any delivery of molten sulfur or sale of excess sulfuric acid in the emissions calculations associated with the Copper World Project. This information was requested by the Department on August 10, 2023 in the letter titled "Copper World Project Air Quality Control Permit Application No. 96659 – Response to the Comprehensive Request for Additional Information." The Department received the requested information on October 31, 2023. The particulate matter emissions associated with the delivery of molten sulfur to support sulfuric acid plant operations and shipment of excess sulfuric acid produced on-site are available in Appendix F of the permit application under "Molten Sulfur/Sulfuric Acid Deliver Shipment Vehicles – SR" in the "Mobile PM" tabs of the emissions calculation spreadsheet.

Comment 127: The commenter expressed concern that the presence of a sulfuric acid plant was not considered in ADEQ's evaluation.

ADEQ Response:

The Department disagrees that the assertion that the operation of a sulfuric acid was not considered by the Department. Section V.B of Air Pollution Control Permit No. 96659 for the Copper World Project adopts emissions limitations for the sulfuric acid plant, in addition to compliance demonstration procedures such as continuous emissions monitoring systems for sulfur dioxide and nitrogen oxide emissions and periodic performance testing for particulate matter emissions from the exhaust stack of the sulfuric acid plant. All emissions sources associated with the sulfuric acid plant, including the potential for the delivery of molten sulfur to support operation of the sulfuric acid plant and shipping excess sulfuric acid produced on-site, were accounted for in both the emissions calculations and ambient air impact analysis for the Copper World Project.

Comment 128: The commenter expressed concern regarding the potential for accidents associated with the transportation of sulfuric acid through nearby communities, such as vehicle rollovers resulting in sulfuric acid spills.

ADEQ Response:

The Department does not have the legal authority to regulate the transportation of materials from the Copper World Project.

BB. SUPPORT

Comment 129: Several commenters expressed support for issuance of the Class II Air Pollution Control Permit for the Copper World Project.

ADEQ Response:

The Department acknowledges comments supporting issuance of the Air Pollution Control Permit for the Copper World Project.

CC. TECHNICAL SUPPORT DOCUMENT

Comment 130: The commenter requested that ADEQ further clarify the pollutants for which the Copper World Project is designated as a synthetic minor source.

ADEQ Response:

Section V of the technical support document clearly identifies voluntarily accepted emissions limitations and standards for all applicable emissions units and pollutants. Additionally, each emissions limitation citing A.A.C. R18-2-306.01.A in Attachment “B” of the permit is a voluntarily accepted emissions limitation accepted in order to be classified as a synthetic minor source, specifically Conditions III.A.1, IV.B.1, and V.B.2 of Attachment “B” of the permit.

Comment 131: The commenter requested that a table documenting the uncontrolled potential to emit be included in the technical support document for the Copper World Project.

ADEQ Response:

The uncontrolled and controlled potential to emit for particulate matter emissions resulting from operation of the Copper World Project can be found in the table below:

Table 9: Copper World Project Particulate Matter Potential to Emit (Controlled and Uncontrolled, tpy)

	Non-Fugitive		Fugitive	
	Controlled	Uncontrolled	Controlled	Uncontrolled
PM	196.48	31,828.38	3,927.20	48,825.31
PM10	60.07	8,748.91	1,103.81	12,650.07
PM2.5	27.98	1,791.05	118.53	1,293.10
Lead	0.02	3.78	0.45	5.82

DD. WATER QUALITY AND WATER USAGE

Comment 132: Several commenters expressed concern regarding contamination resulting from stormwater runoff from tailings storage facilities at the Copper World Project.

ADEQ Response:

The air quality permit for the Copper World Project does not regulate the discharge of contaminants to surface waters. Discharges to surface waters are regulated under the Arizona Pollutant Discharge Elimination System (AZPDES) program. The AZPDES program regulates industrial stormwater discharges through the Multi-Sector General Permit (MSGP). The MSGP requires the implementation of a stormwater pollution prevention plan, analytical monitoring, and visual assessments to protect surface water quality. Prior to discharging stormwater to protect surface water, Copper World, Inc. will be required to obtain an AZPDES MSGP.

Comment 133: Several commenters expressed concern regarding the potential for aquifer contamination resulting from the operation of the Copper World Project, including requests for the requirement to implement liners for tailings storage facilities.

ADEQ Response:

The air quality permit for the Copper World Project does not regulate discharge of pollutants to the groundwater. Discharges to ground water are regulated by the Arizona Aquifer Protection Permitting (APP) program. Aquifer Protection Permit No. 513690 was issued to Copper World, Inc. for the Copper World Project on August 29, 2024. This Aquifer Protection Permit authorizes the Copper World Project to implement a seepage collection system rather than liners to prevent leakage into groundwater associated with the tailings storage facilities.

Comment 134: Several commenters expressed concern regarding the impacts of water usage required for the operation of a new copper mine on the aquifer and local water availability.

ADEQ Response:

The air quality permit for the Copper World Project does not regulate the quantity of water used by the Copper World Project. The Arizona Department of Environmental Quality does not have legal authority to regulate water usage.

IV. SIGNIFICANT CHANGES MADE TO THE AIR QUALITY PERMIT

The following section discusses any conditions in the air quality permit that were revised or adopted as a result of a comment received during the public comment period.

A. Condition XII.C of Attachment “A”

Condition XII.C of Attachment “A” for Emergency Provisions previously available under the Title V permitting program has been removed from the permit.

B. Condition XII.D of Attachment “A”

Condition XII.D of Attachment “A” for Affirmative Defenses for Startup, Shut Down, and Malfunctions previously available under the Title V permitting program has been removed from the permit.

C. Condition XX.B of Attachment “A”

Condition XX.B of Attachment “A” added to further clarify the permit shield requirements.

D. Condition II.A of Attachment “B”

Condition II.A of Attachment “B” was revised to explicitly require that manufacturer’s specifications for all air pollution control equipment be maintained on-site at all times.

E. Condition II.B.2.a of Attachment “B”

Condition II.B.2.a of Attachment “B” was revised to provide clarification regarding the procedures for determining material mined by the Copper World Project.

F. Condition II.C.2 of Attachment “B”

Condition II.C.2 of Attachment “B” was revised to require an EPA Reference Method 9 certified observer be onsite at all times during operation of the Copper World Project.

G. Condition III.A.3.d of Attachment “B”

Condition III.A.3.d of Attachment “B” was added to incorporate additional monitoring requirements to require EPA Reference Method 22 observations of air pollution control equipment in order to further ensure that air pollution control equipment supporting ore processing operations achieves that capture and control efficiencies outlined by the permit application and required by the permit for the Copper World Project.

H. Condition III.A.3.e of Attachment “B”

Condition III.A.3.e of Attachment “B” was revised to ensure that inspections are conducted to ensure that water fogging suppression systems are properly operated consistent with manufacturer’s specifications.

I. Condition V.E.1 of Attachment “B”

Condition V.E.1 of Attachment “B” was revised to incorporate requirements for Excess Emissions and Monitoring System report requirements for nitrogen oxide continuous emissions monitoring systems measuring emissions from the sulfuric acid plant.

V. COMMENTERS

Table 10 lists the names of the commenter in alphabetical order by last name:

Table 10: List of Commenters

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Abdirahman	Abdiweli	Lemarr	Geoffrey
A-Braham	Rita	Leon	Esther
Abubakar	Sharmaine	Leon	Patricia
Acedo	Jean	Leonard	Fred
Acker	Debra	Leonard	Martha
Ackerman	Thomas	Lerwick	Marita
Acuna	Cutzberto	Lerwick	Rita
Acuna	Juan	Lerwick	Steven
Adams	Gail	Leshner	Jan
Adams	Jann	Leslie	Kenneth
Adams	Jerry	Lesso	Gloria
Adams	Keith	Levi Pyka-Schreier	Kamil
Adams	Stacy	Levytska	Olha
Adams	Susan-R	Lewis	Lisa
Adamson	Marylee	Lewis	Melvin
Adamson	William	Lewis	Tiffany
Agredano	Joseph	Lewison	James
Aguila	Lynda	Leyn	Paul
Aguilar	Balbino	Leyva	Luis
Aguilar	Esmeralda	Leyvas	Michael
Aguirre	Ruby	Libby	Su
Ahmed	Ahmed	Liedl	Jean
Aikman	Alan	Lile	Pamela
Aikman	Nancy	Linda	Okeeffe
Ainbinder	Alex	Lindberg	Donald
Alaniz	Edward	Lininger	Lyle
Albany	Jana	Lipskey	Denie

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Albert	Andrea	Little	Thomas-Terry
Albert	Antonia	Livingston	Wanda
Albert	Norman	Lizarraga	Celia
Aldred	Randy	Lloyd	Brandon
Aldrich	Thomas	Lloyd	Shannon
Alejandro	Lopez	Lofton	Maebell
Alford	Emily	Lollar	Donna
Allen	Carrie	Lombardo	James
Allen	Desiree	Long	Rita
Allen	Dionicio	Long	Stephen
Allen	Timothy	Lopez	Alice
Almanza	Jose	Lopez	Armida
Alston	Donna	Lopez	Becky
Alvarado	Cindy	Lopez	Effie
Alvarado	Rubin	Lopez	Karen
Alvarez	Fernando	Lopez	Lilian
Alvarez	Jerome	Lopez	Marco
Alvarez	Rosemary	Lopez	Nroma
Alvarez	Yvonne	Lopez	Patricia
Ambriz	Diana	Lopez	Richard
Amburgey	Hope	Lopez	Sean
Amburn	James	Lopez	Vernica
Amerson	Vanessa	Lopez	Virginia
Ames	Helena	Lorenzo Aguilar	Norberto
Anderson	Brad	Lovato	Charles
Anderson	Glenn	Lovato	Dianne
Anderson	Joyce	Love	Andrea
Anderson	Misty	Loveless	Marilyn
Anderson	Robert	Lowery	Edmind
Anderson	Suzanne	Lowery	Karen
Angton	Jerry	Lowes	Russell
Ann Lefebvre	Ruth	Lowhorn	Steven

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Antal	Angela	Loy	Roberta
Antonio	Maxine	Lozano	Crucifixion
Apodaca	Juan-Manuel	Lozano	Linda
Apodaca	Louis	Lucas	Deborah
Appell	Benjamin	Lueck	Karen
Aquino	Abner	Lugo	Andrea
Araiza	Patricia	Lumingu	Jephte
Arberr	Sarah-Barber	Luna	Dennison
Arbuckle	Betty	Lundquist	Judy
Archambeault	Joseph	Lusk	Joanne
Archie	Vanessa	Lusk	Tivone
Arciaga	Mariafe	Lutz	Jonathan
Arenas	Manuel	Lutz	Michael
Arevalos	Anna	Luxenberg	Nina
Arispe	Felipe	Lybarger	Joshua
Armstrong	Jeremiah	Lyden	Johnny
Arne	Sheryl	Lynette Libdan	J
Arnold	Bruce	Lynne	Martha
Arnold	Cathy	Lyon	Janice
Arnold-Tracy	Candyce	Lyon	Rose
Arundell	Chris	M Navarro Navarro	Victor
Arvizu	Maria	Mabry	Shannon
Ashby	Jason	Macduff	Ayda
Ashcraft	Larry	Macfarlane	Amber
Asher	Barbara	Machado	Florentina
Ashlock	Msry	Mack	Angie
Ashrafpour	Esmaeel	Mackenzie	Stella
Astorga	Tammy	Maclean	Pat
Atkins	Erin	Madrid	Patricia
Avalos	Gia	Maes	Jan
Averkiyev	Oleksandr	Magaard	Donna
Avila	Angela	Magallanes	Piper

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Avila	Cristina	Magee	Robert
Avila	Edward	Magruder	Marshall
Avina	Jose	Makowski	Joan
Babson	Dave	Maldonado	Joe
Babson	Sandy	Maldonado	Pedro
Baca	Zenaida	Maldonado	Rene--Antonio
Backman	La	Maloney	Philip
Bacon	Dawn	Malott	James
Baha	Bryan	Mamani	Senovia
Bahena	Ruth-Jahaira	Manganelli	Robert
Bahr	Sandy	Mangiarotti	Vincent
Baker	Beryl	Manley	Susan
Baker	Caitlin	Manley	Yvette
Baker	Connie	Manoleff	Laurie
Baker	John	Manuel	Lorice
Baker	Justin	Manuel	Sherry
Baker	Marti	Marcellus	Gwendolyn
Baker-Jr	Curtis	Marciszewski	Val
Balderas	Abel	Marin	Virginia
Baldonado	Christina	Marinello	Mike
Baldwin	Anne	Mariscal	Pablo
Ball	Lynn	Marr	Diane
Ball	Todd	Marrow	Ahzhiah
Balsiger	Linda	Marshall	Owen
Balsiger	Randall	Marshall	Richard
Baltzo	Joanna	Marshall	William
Bambulas	Pamela	Martin	Brendan
Bankineza	Celestine	Martin	Donna
Baratta	Elnora	Martin	Jean
Barber	Michael	Martin	Joe
B-Arellano	Sergio	Martin	Laura
Barg	Mary	Martin	Sharon

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Barker	David	Martin	Tyler
Barkley	Marlin	Martindale	Kevin
Barnes	Denise	Martinez	Esmaiel
Barnes	Lisa	Martinez	Eva
Barnett	Laura	Martinez	Hector
Barnhard	Betty	Martinez	Jd
Barr	Denise	Martinez	Joey
Barr	Stewart	Martinez	Kevin
Barroga	Shawna	Martinez	Patricia
Barrow	Aaron	Martinez	Robert
Barry	Darlene	Martinez	Rosa
Bartes	Binji	Martinez	Victor
Bartlette	Yonna	Mason	Dale
Barzaga	Danydel	Mason	Kathleen
Bass	Rick	Mason	Leslie
Bassi	Melissa	Masterson	Jeff
Bateman	Brandon	Matchey	Cynthia
Bates	Linda	Mathes	Horst
Batson	Louis	Matsel	Dale
Bayless	Linda	Matteson	Helen
Bayless	Randy	May	Marques
Beal	Deron	Mayer	Barbara
Beam	William	Mayes	Lee
Beard	Gary	Maynard	Douglas
Beaver	Leann	Mayrsohn	Valerie
Becenti	Lois	Mboussou	Moise
Beck	Kim	Mboussou	Perpignant
Beck	Loretta	Mccabe	Elizabeth
Becker	Rebecca	Mccarthy	Christopher
Beckstead	Debi	Mccarty	Tom
Beem	Ardis	Mcclellan	Alan
Begay	Ervin	Mcclellan	Janice

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Begay	Kristy	Mcclellan	Patrick
Beggy	Holly	Mcclish	Deborah
Begishie	Marshall	Mccormick	Tara
Begody	Alice	Mccoy	Lucille
Beian	Norma	Mccoy	Mellony
Bejarano	Melanie	Mccray	Terry
Belcher	David	Mccrory	Clifford
Bell	Jacquelyn	Mcdade	Joshua
Bell	Sheldon	Mcdermid	Margaret
Bell	Stephanie	Mcdonald	Porter
Beltran	Angelica	Mcgee	Byron
Benavidez	Doreen	Mcgee	Tyler
Benedict	Robert	Mcgrath	Cathy
Benner	Robert	Mcgrath	Joe
Bennett	Alberto	Mckenzie	Mandy
Bennett	Harry	Mckinley	Tracy
Bennett	Kelley	Mclaurin	Clarence
Bennett	Saba	Mclean	Faye
Bente	Mary	Mcnatt	Eva
Berg	Daniel	Mcneely	Donna
Bergantin	Myriam	Mcphe	Cecilia
Berger	Anna	Mcspadden	Russ
Bergsgaard	Donna	Mcthias	Celeste
Berlanga	Hugo	Mears	Ed
Bermúdez	Antonio	Mebrahtu	Iyob
Bertram	Mike	Medina	Donald
Bessey	Carson	Medlyn	John
Betancourt	Corina	Mehrer	Julia
Betancourt	Olivia	Mejias	Yuleidis
Betton	Ricky-W	Melchert	Noreen
Bickers	Rochelle	Melland	Nadine
Bierman	Kenneth	Mellor	Becky

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Big	Alinda	Mendez	Cynthia
Biggers	Douglas	Mendoza	Frank
Birchfield	Wilburn	Meraz	Jesus
Birdow	Brian	Meredith	Doyle
Birkedahl	Suzanne	Merrill	Curtis
Bishop	Karen	Mesa	Erick
Bisschop	Peter	Mesajr	Gilbert
Bitsui	Priscilla	Metcalf	Mark
Blake	Erlinda	Metheney	Bridgette
Blake	Joanne	Meyer	Chris
Blancas	Arthur	Meza	Antonio
Blocker	Christopher	Meza	Gustavo
Bobzien	Tami	Meza	Kim
Bomengen	Kevin	Michael	Cody
Bondeson	Mark	Michael Ray Jacobson	Dr.
Bonnett	Amber	Michalek	David
Boquard	Carol	Michod	Richard
Borg	Lynn	Mickens	Cheryl
Boris	Tim	Mielke	Rhonda
Borntrager	Charles	Miguel	Muskyeo
Borozan	Beth	Mikulic	Michele
Borrero	Evelyn	Miler	Margaret
Bortz	Diana	Miles	Randy
Boston	Virginia	Miles	Rosemary
Boswell	Richard	Miller	Cathy
Botello	Jose	Miller	Cynthia
Bouchard	Phillip	Miller	James
Bowman	Shirley	Miller	Jeanine
Bowser	Elizabeth	Miller	Jeff
Boyd	Pat	Miller	Jonathan
Boyd	Raymond	Miller	Kent
Boyer	Kevin	Miller	Mildred

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Boyer	Michelle	Miller	Palmer
Boyer	Shana	Miller	Sherlynn
Brady	Kelly	Milliron	Sharron
Brainerd-Poo	Elizabeth	Millius	Mike
Brand	Tina	Mills	Dulce
Branham	Charles	Mills	Lawayne
Brasswel	Kerry	Minniti	Holly
Brautovich	Thomas	Miranda	Jesus
Bray	Rosario	Miranda	Trina
Bregar	Dennis	Mirelez	Kelly
Breur	Sandra	Mirzaeipour	Mandana
Brevig	Leroy	Mischle	Christine
Briggs	Virginia	Mitchel	John
Brigham	Dawn	Mitchell	Rocky
Bright	Anthony	Mizell	Melanie
Brija	Lance	Modaff	Tom
Brill	Deann	Mohler	Marie
Brill	Scott	Mohr	Patricia
Brinkley	Margie	Molina	George
Brinkman	Beverly	Molina	Richard
Britt	Anne	Molina	Robert
Broadley	David	Money	Joan
Bronson	Laurie	Monreal-Arochi	Maria-Magdalena
Broome	James	Montes	Richard
Brouillette	Barbara	Montgomery	Frank
Brown	Dave	Montoya	Arturo
Brown	Gail	Montoya	Teresa
Brown	Joan	Moody	Christi
Brown	Judy	Moody	Marie-Christine
Brown	Kathleen	Moore	James
Brown	Kathy	Moore	Jason
Brown	Laura	Moore	Kathey

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Brown	Leroy	Moore	Molly
Brown	Macarthur	Moore	Nina
Brown	Ray	Moore	Penny
Brown	Robert	Moorer	Marcherie
Brown	Stephen	Mora	Bonney
Brown	Thomas	Moralee	Brad
Brown	Thomas	Morales	Arthur
Brown	Wendy	Morales	Dana
Brownell	Ronald	Morales	Daniel
Brownjr	Lawrence	Moran	Arturo
Brudno	Daniel	Moran	Laura
Bruhn	Carl	Moran	Paul
Brumfield	Clyde	Morehouse	Scott
Brumfield	Pamela	Morelos	Mary
Brunson	Dino	Moreno	Gabrielle
Brutten	Sheila	Moreno	Melanie
Bryan	Luana	Morgan	Sylvia
Bryant	Chet	Morine	Wendy
Bryant	Lori	Morneau	Beatrice
Buehl	Matthew	Morneau	Dennis
Buell	Joshua	Morris	Antrel
Buell	Julie	Morris	Chad
Bundy	Natalie	Morris	Jennifer
Bundy	Steve	Morris	Mariella
Burcham	Douglas	Morris	Richard
Burgess	Raymond	Morrow	Samantha
Burghardt	William	Moss	Stacy
Burk	Mary	Motley	Denise
Burke	Suzanne	Mott	Teressa
Burks	Carol	Motter	Leticia
Burns	Chad	Mottet	Michael
Burns	Emily	Mounkes	James

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Burns	Rita-J	Moya	Edward
Burruelegastelum	Lupe	Moya	Tracey
Burton	Gloria	Mrock	Jonathon
Burton	Robert	Muhammad	Akeem
Burton	Wadie	Mullen	Matt
Butler	Walter	Mullen	Traci
Butterbaugh	Barton	Muller	Delia
Bynes	Albert	Mulnix	Jerry
Byrd	Mona	Munoz	Alan
C Thornton	William	Munoz	Oscar
Cabrera	Jeri	Murillo	Benancia
Cacho	Pavel	Murphy	Anna
Calcagno	Joan	Murphy	John
Calcaterra	Julie	Murphy	Katherine
Calhoun	Bonnie	Murphy	Nancy
Calhoun	Susan	Murphy	Susan
Call	Karin	Murphy	Tom
Callaway	Jennifer	Murrell	Carol
Calles	Brandon	Myers	Ted
Calloway	Katherine	Myers	Terry
Calvin	Bernard	Nagler	Lewis
Calvin	Leilani	Nagy	Chris
Camacho	Erika	Nalielua	Shantelle
Camacho	Itzia	Nalley	Deborah
Camacho	Jose	Nappier	Courtney
Camacho	Nestor	Narcho	Mia
Campbell	Brenda	Narmore	Heidi
Campbell	Bruce	Nash	Vickie
Campbell	Carolyn	Nash-Byers-M	Delores
Campbell	Ralph	Navarro	Chris
Campos	Ashley	Navarro	Susan
Cancino	Anita	Naylor	Ralph

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Candelaria	Karla	Neal	Wiillie
Cannon	Alain	Nearon	Anita
Cantrell	David	Negron	Kayla
Cantu	Paco	Neighbors	Romero
Canzoneri	Neysa	Neil	Russell
Capanear	Vanessa	Neito	Sara
Capilla	Luis	Nelson	Cheryl
Capuchino	Crystal	Nelson	Heather
Caputo	Philip	Nelson	Jason
Caraveo	Susana	Nelson	Thomas
Carbajal	Patricia	Nera	Marylou
Carbaugh	Michele	Nerud	Raann
Carbone	Marylou	Netherlin	Ana
Card	Carla	Neuendorf	John
Carmical	Ashley	Neumann	Renee
Carnahan	Jessica	Neumann	Renée
Carolan	Theresa	Newberry	Jolynn
Carpenter	Connie	Newsom	Starla
Carr	Richard	Ngwogu	Kingsley
Carranza	Aaron	Nichols	Jeremy
Carranza	Ernest	Nichols	Maryann
Carranza	Sarah	Nickle	Karen
Carriere	Jean	Niederquell	Hans
Carrillo	Angelo	Nieto	Alfonso
Carrillo	Efren	Nilson	Brandi
Carrillo	Ricardo	Nolen	Terry
Carroll	Ashley	Noriega	Vicki
Carroll	Suzanne	Norris	Vicki
Carrozza	Diane	Norton	Stacie
Carter	Christopher	N-Th-Ave	Aleah
Carubbi	Tom	Nugent	Louis
Casey	Verne	Nunes	Kenneth

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Cashman	Rosemary	Nunez	Kim
Casillas	Joe	Nusbaum	Gloria
Cassady	Max-Sabo	Nye	Norman
Cassaro	Zachary	Obezo	Adolph
Castaneda	Christine	O'Brien	Ellen
Castle	Christopher	O'Brien	Gail
Castro	Sulema	Obryan	Timothy
Cathcart	Heather	Ochoa	Daniel
Catten	Stephanie	Ochoa	Dayana
Causey	Frances	O'Connor	Jeffrey
Cazares	Aurelia	Odell	Bonita
Cecena	Rudy	Odham	Betty
Cellier	Ruby	Odle	Rob
Centeno	Anayeli	O'Dowd	James
Cervantes	Cecelia	Ogas	David
Cesar	John	Ogle	Bill
Chacon	Erik	O'Hanlon	Larry
Chacon	Gustavo	Ohlin	Cheryl
Chacon	Rosa	Olari	John
Chadwick	Courtney	Oleary	James
Chamberlain	Joseph	Oliver	Silvia
Chamberlain	Patrick	Olivera	Alberto
Chambers	Kristi	Olkiewicz	Craig
Chan	Post	Ollerhead	Peggy
Chandler	Joe	Olmstead	Scott
Chandler	Mintamarie	Olvera	Carlos
Chaney	Irene	Omeara	Tina
Chaplin	Clarence	O'Neill	Dodd
Chapman	Jeanie	Oppenheimer	Bill
Chapman	Juanita	Oquita	Abelardo
Chapman	Michael	Or Jane Reish	John
Chappel	John	Oravetz	Roger

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Charette	Ina	Orduno	Iliana
Charles	Ackerman	Orlando	Cindy
Chase	Lyndora	Ornelas	Joaquin
Chastain	Robert	Ornoski	Mike
Chavez	Maria-M	Orosco	Angela
Chavez	Pedro	Orozco	Bertha
Chavez	Sandra	Ortega	Josephine
Chavez	Santiago	Ortega	Melissa
Chavez	Vanessa	Osborn	Christie
Chenoweth	Kim	Oshea	Julia
Cherico	Vicki	Osloan	Charly
Chesner	Donna	Ostic	Wes
Chezumpena	Travis	Otero	Jenny
Chisholm	Constance	Otis	Elizabeth
Chisholm	Donald	Owen	Margaret
Choate	Jenny	Ozaeta	Yvonne
Christiason	Kevin	Pablo	Mario-Pablo
Christopher	Michael	Padias	Cecilia
Christopherson	Cathy	Padias	Rossana
Chronister	Kathryn	Padilla	Raul
Churchley	Scott	Page	Shirley
Ciarlo	Annette	Pakulis	Kevin
Cicak	Brian	Palafox	Adrian
Clark	Christine	Palomares	James
Clark	Jessica	Palumbo	Roland
Clark	Mike	Pampanin	Bertram
Clark	Rod	Pankratz	Brian
Clark	William	Pape	Barbara
Clarke	Jennifer	Paquette	Sean
Clarke	Ron	Parenti	William
Clarke	William	Parise	Meredith
Clauschee	Anthony	Parish	Susan

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Clay	Bea	Parker	Alan
Clements	Barry	Parker	Lyndia
Clews	Judy	Parra	Cheryl
Cline	Erin	Parra	Erica
Clover	Keith	Parshall	Charles
Clock	Anne	Parson	Arthur-Parson
Coblentz	David	Pascoe	Bobette
Cody	Marylou	Pasillas	Sandra
Coffey	Dick	Pasqualini	Danial
Coffey	Donna	Pastrano	Veronica
Coffman	Jerri	Pattengale	Patrick
Colbert	Julia	Patterson	Alicia
Cole	Misty	Patterson	Dianne
Cole	Steven	Pavo	Charlice
Coleman	Lanesha	Payton	Donna
Coles	Therese	Pederson	Christopher
Collins	Daphne	Peevey	Dawn-Marie
Collins	Michael	Pelayo	Martin
Colquhoun	Meshell	Pell	Georgia
Combs	Larry	Pellegrino	Marjorie
Condon	Paul	Pellegrino	Steve
Confair	Tim	Pena	Damaris
Conner	Bernard	Penner	Martin
Conner	Charles	Penson	John
Cons-Jr	Pedro	Pentland	Anne
Constable	Jennifer	Peralta	Gilbertpierre
Contreras	Loretta	Perea	Jo-Ann
Contreras	Maria	Pereyda	Jorge
Cook	Charles	Perez	Guillermo
Cook	Jessica	Perez	Juan
Cooke	Tami	Perez	Tammy
Cooper	James	Perez-Santos	Agustina

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Cope	Vicki	Perret	Candace
Cordero	Luis	Perry	Jazmyne
Cordova	Anita	Pervanger	Dorothy
Corona	Anita	Pete	Felicia
Coronado	Mahael	Peters	Rob
Corrales	Esther	Petersen	Gary
Cortez	James	Peterson	Elizabeth
Cortez	Modesto	Peterson	J.
Cosato	Theresa	Peterson	Lamar
Cossio	Claudio	Peterson	Mark
Cotter	Justina	Petty	Wayne
Cotton	Kenneth	Peuse	Donna
Courtney	Todd	Pfeiffer	Kurt
Cowper	Harriet	Pham	Pamela
Cox	Dennis	Phares	Timothy
Cox	Gary	Phelps	Kimberly
Cox	Mike	Phifer	Donald
Craddock	Rosie	Phillips	Nancy
Cranor	Lonnie	Pichee	Mike
Crespin	Robert	Pierson	D.L.
Cribbs	Ryan	Pierson	Donald
Crisboi	Ted	Pierson	Juliann
Crisboi	Theodore	Pierson	Mary
Cronin	Patrick	Pina	Rene
Cross	Christian	Pinckard	Dusty
Crow	Johnny	Pingree	Teri
Crowell	James	Pinkins	Rickie
Cruz	Gene	Pittman	Betty
Cruz	Maria	Pitts	Doug
Cruz	Michael	Pitts	Frank
Cruz	Oscar	Ploeser	Richard
Cruz	Roberta	Plotnik	Roxanne

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Crystal	Magdaleno	Plumbtree	R-Tree
Cuen	Jorge	Poindexter	Wanda
Cuison	Maria	Policy	Emalia
Cummings	Robert	Poling	Jerry
Cunningham	Cari	Ponce	Anais
Cunningham	Elizabeth	Pop	Purple
Cunningham	Matthew	Popp	Susan
Curley	Jean	Porter-Jr	Robert
Czech	Jim	Portillo	Reyna
D Contreras	Maria	Posada	Ihasmeell
Dahlgren	Ann	Prather	Erica
Dahn	Deborah	Prescott	Robert
Daines	Julie	Pressler	Shelley
Dale	Brokaw	Pressley	Veronica
Dan	Peace	Prewitt	Kelly-S
Dang	An	Primeau	James
Dani	Christiano	Pringle	Chris
Danowitz	Ann	Priniski	Joseph
Darian	Anna	Procopio	Robin
Darling	Mary	Pruitte	Kendrick
Dash	Emilio	Przybylski	Terrence
Dash	Mandy	Puckett	Paul
Datema	Tanya	Putney	April
Daugherty	Casscena	Quesada	Grethel
Davenport	Elizabeth	Quigley	Susan
Davenport	Royce	Quihuis	Lisa
Davidson	Brian	Quijada	Gabriel
Davidson	Ronald	Quijada	Mickey
Davis	Christopher	Quintana	Edwina
Davis	David	Raduenz	Gary
Davis	Donald	Rahilly	Mary
Davis	Mark	Rahlf	Rob

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Davis	Michael	Raimonde	Cynthia
Davison	Sheri	Ramirez	Araceli
Dawson	Jon	Ramirez	Claudia
Day	Gilbert	Ramirez	Colleen
Day	Victoria	Ramirez	Gabriel
De La Torre	Elva	Ramirez	Joyce
De Orbegoso	Fernando	Ramirez	Maria-Graciela-Gil
Dean	Jeremy	Ramirez	Prisma
Deatrick	Floyd	Ramirez	Raquel
Deblasi	Joe	Ramirez	Rebecca
Debth	Monika	Ramirez	Valarie
Decastro	Vanessa	Ramirez	Victor
Deck	Barbara	Ramos	Manuel
De-Clue	Marie	Ramos	Phillip
Dees	Kenneth	Ramos	Richard
Degner	Edward	Ramseyer	Judith
Degroot	David	Randall	Lynn
Deichert	John	Randolph	Bobby
Delaura	Dominick	Rangel	Justin
Delcoure	James	Rankin	Timothy
Deleon	Greg	Rasheed	Naeem
Delgadillo	Dany	Rasmussen	Heather
Delgado	Fabiola	Rathbun	John
Delgado	Maria	Rathburn	Robert
Dellapenta	Cathy	Raulsome	Ruthann
Delprete	Ernest	Ravits	Emily
Demaio	Cheri	Ray	Franke
Demarco	Joseph	Ray	Zachary
Demars	Elsmarie	Rayon	Melesio
Demars	Peter	Rediger	Clyde
De-Matteis	Joseph	Reed	Christian
Demelo	Neal	Reed	Joann

Committer Last Name	Committer First Name	Committer Last Name	Committer First Name
D'Emidio	Brad	Reed	Katherine
Denny	Steven	Reed	Robin
Depierro	Patricia	Reed	Ronetta
Despain	Joshua	Reed	Tony
Devesty	Angela	Reed	Virginia
Devesty	Blaine	Rees	Dawnette
Devinney	Taran	Regnier	Marilyn
Devol	Ionia	Reid	Carole
Devora	Maria	Reidandrews	Amy
Dewald	Larry	Relyea	Jannette
Dhruv	Eric	Remblake	Therese
Diaz	Elpidia	Remedios	Manuel
Diaz	Jesse	Remer	Nadji
Diaz	Lupe	Renee Daniel	L
Diaz	Myrna	Rener	Nadji
Diaz	Phoebe	Renner	Bette-Jean
Dibble	Heather	Rexroade	Brenda
Dickison	Barbara	Reyes	Yolanda
Dickson	Michael	Reyna	Jerry
Dicochea	Maria	Ribbing	Donald
Didur	Nick	Rice	Stephanie
Dimaggio	Blair	Richard	Wilcoxon
Dimino	Michael	Richards	Scott
Dixon	Bruce	Richards	Shawn
Dixon Sr	Eddie	Richardson	Charlotte
Doherty	Luz	Richardson	Lon
Dolinsek	Julie	Richter	Paulette
Dominguez	Juan	Rick	Vandavelde
Dominguez	Margaret	Rico	Daniel
Dominguez	Maria	Righello	Darcy
Dominguez	Rosa	Righello	Paul
Donathan	Elizabeth	Riley	Dennis

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Donohoe	Margaret	Riley	Kaylynn
Donohue	Carolyn	Riley	Kennan
Dorn	Deb	Riley	Nona
Dorris	James	Rincon	Sherrill
Doty	Kim	Ringsrud	Brant
Dougherty	Tammy	Rintala	Raymond
Dove	William	Rios	Martin
Downer	Patricia	Rios	Pablo
Downes	Glenna	Ripley	Nikki
Downing	Renee	Ritchie	Edith
Draper	Tikari	Rivera	Carlota
Drennan	Princess	Rivera	Lourdes
Drew	Debbie	Rivera	Roberta
Drew	Deborah	Rivera	Roda
Dribo	Binton	Rivera	Sandra
Duarte	Julie	Riveraaparicio	Margarechristine
Duby	Steven	Rivers	Racqueline
Duffins	Kenya	Roaninn	R
Duffy	Nathan	Robbins	Alan
Dukes	Evelyn	Roberson	Gregory
Duncan	Pamela	Robert	Bartelson
Dunker	Bruce	Roberts	Daniel
Dunn	Charles	Robertshaw	Larry
Duran	Carolina	Robertshaw	Lawrence
Durham	Robert	Robertshaw	Sylvie
Dustrud	Faith	Robertson	Amber
Duvall	Robert	Robertson	Tina
Dykes	Mary-Danese	Robertson	Vera
Dyl	Judith	Robichaux	Monalisa
Eads	Wendy	Robinson	Devantae
Eastburn	Anne	Robinson	Janice
Echica	Mamirasol	Robinson	Rosalie

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Edd	Kevin	Robles	Ernesto
Eddy	Brenda	Roche	Robin
Edwards	Brenda	Rodgers	Richard
Edwards	Denise	Rodriguez	Barbara
E-Guzman	Adriana	Rodriguez	Carlos
Ehnert	Margaret	Rodriguez	Carol
Eick	Kimbrely	Rodriguez	Connie
Elias	Yolanda	Rodriguez	Cora
Elliott	Thomas	Rodriguez	Danny
Elson	Patricia	Rodriguez	Erlinda
Elston	Gary	Rodriguez	Jennifer
Elverud	Danae	Rodriguez	Jorge
Emerson	Martha	Rodriguez	Juany
Emerson	Phillip	Rodriguez	Rebecca
Emery	Harold	Rodriguez	Ricardo
Emmwrick	Monica	Rodriguez	Robert
Endline	Larry	Rodriguez	Roberto
Engelbrecht	Alexandra	Rodriguez	Teresa
Ingram	Susie	Rodriguez	Virginia
Enrique	Gina	Rogers	Curtis
Enriquez	Elizabeth	Rogers	Indiana
Enriquez	Olga	Rogers	John
Entzminger	Yolanda	Rogers	Paul
Epperson	Leslie	Rogers	Tracy
Epperson	Leslie	Rojas	Luz
Escobedo	Albert	Roman	Maria
Espe	Carol	Romero	Amanda
Esquer	Samantha	Romero	Concepcion
Estrada	Josephine	Romero	Jorge
Estrella	Guadalupe	Romero	Mercy
Etzenhouser	Linda	Romesburg	Eugene
Evans	Anthony	Romo-Lucero	Ana

Committer Last Name	Committer First Name	Committer Last Name	Committer First Name
Evans	Leo	Roosa	Dayne
Evans	Leron	Roper	Stewart
Ewing	Kimberly	Rosales	Deanna
Fabre	Monica	Rosario	Mariano
Facio	Joy	Rose	April
Fagin	Wayne	Rosen	Helen
Fahrenbruch	Ashley	Rosenberg	Deirdre
Faircloth	James	Rosete	Rudy
Falcon	Angela	Rosier	Susan
Fanaika	Kilisitina	Ross	Bryan
Farleyhussein	Jimmy	Ross	Sandra
Faubert	Bruce	Rossell	Terry
Faz	Aleja	Rossetter	Pamela
Fear	Lloyd	Roth	Daniel
Featherstone	Roger	Roth	Samantha
Federickson	Joan	Rouleau	Michael
Feiger	David	Roush	Robert
Felice	Evelyn	Roy	Lamar
Felipe	Isabel	Roy	Robinson
Felix	Jessica	Royal	Michelle
Fellars	Carol	Rubenstein	Joelle
Ferguson	Debbie	Rubio	Juqn
Ferguson	Patricia	Ruby	Montoya
Ferguson	Scott	Rudman	Glenn
Fernandez	Andres	Rudolph	Allan
Fernandez	Christina	Rudolph	Darlene
Fernandez	Henry	Ruelas	Jesus
Fernandez	Rosalee	Ruelas	Joe
Fey	David	Ruhle	Nodene
Field	Shelly	Ruhmel	Theresa
Fierros	David	Ruiz	Bill
Figueroa	Alejandro	Ruiz	Briana

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Figurelli	James	Ruiz	Peter
Fimreite	Lucille	Ruiz	Robert
Finman	Laurence	Ruiz	Victoria
Finstrom	Holly	Rush	Andrew
Finstrom	Matt	Rushlow	Roger
Firestone	Lynne	Rutledge	Christopher
Fischer	Michael	Ryan	Anne
Fisher	Lisa	Ryan	Jim
Flaiani	Frank	Ryan	Kathleen-A
Flesch	Aaron	Sadoff	Suzanne
Fletcher	Member	Sadowski	Dave
Flores	Chris	Saenz	Eli-Saenz
Flores	Daniel	Salas	Frank
Flores	Floyd	Salgado	Oscar
Flores	Jose	Salmon	Johnny
Flores	Leopoldo	Salter	Loralee
Flores	Martha-J	Salvatierra	Jonathan
Flores	Vincent	Salzman	William
Flowers	Brenda	Samperio	Sandra
Flowers	Kathy	Sanchez	Arthur
Foley	Jeanene	Sanchez	Cristian
Fontes	Eva	Sanchez	Drusilla
Ford	Tara	Sanchez	Ginanicole
Forsberg	Carol	Sandeen	Bruce
Fosca	David	Sanders	Kevin
Foss-Ii	Jack	Sanderson	Joss
Foster	Angela	Sandifer	Mike
Foster	David	Sandoval	Cecilio
Foster	Margaret	Sandoval	Monica
Fox	Deborah	Sandra	Ferraro
Fox	Kristi	Sandu	Dana
Fox	Lillian	Sanford	Robert

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Fox	Stephanie	Sanger	Donald
France	Rigby	Sansone	Michael
Francis	Sophia	Santell	Crystal
Franco	Robert	Sauer	Kathleen
Franke	Consuelo	Saunders	Joy
Franklin	Rhonda	Sautter	Andrea
Franko	Stevia	Sautter	Tim
Fratelo	Melissa	Sawyers	Delbert
Frayser	Roy	Scalpone	Nick
Frazier	Michael	Scanlon	Timothy
Frederick	Karen	Schacher	Josh
Freeland-Little	Patricia	Schaefer	Aster
Freeman	Ryan	Scheinkman	Tracy
Freeman-Lewis	Sherri	Scherb	Celia
Freeman-Yazzie	Faith	Schewel	Heidi
Friel	Mike	Schieber	Electa-Ann
Frigillana	Divina	Schlicht-Gonzalez	Terra
Fritzler	Joan	Schlitter	Linda
Fritz-Reichenbacher	Marcie	Schmidt	C.
Fry	Sandee	Schmidt	Cindy
Fuller	Eric	Schmidt	Margaret
Fuller	Paula	Schmidt	Thomas
Fullilove	John	Schmidt	Tom
Fuqua	Nancy	Schneider	Robert
Furman	Chad	Schnurr	Matthew
Furrie	John	Schoenbach	Neal
Furuhashi	Janice	Schoengarth	Donald
Fuster-Miranda	Belkis	Schoenherr	Shirley-Schoenherr
Fyffe	Kristy	Schroeder	Steven
Gaitan	Rodolfo	Schrum	Kelly
Gakuba	Iohn	Schuh	Tina
Galindo	Jamie	Schultz	Dee-Alan

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Gallardo	John	Schumacher	Lois
Gallaway	Charlotte	Schwamberger	Chris
Gallegos	Leopold	Schwiebert	Daniel
Gallegos	Rudy	Scoggins	Joshua
Gallo	Karen	Scott	Helma
Gamble	Michael	Scott	Lori
Gamez	Jesus	Scott	Mary
Gamrath	Dave	Scott	Schneider
Gamrath	David	Scotti	Jim
Gamrath	Shamah	Screven	Susan
Gandara	Hector	Seales	Veronica
Gaona	Simon	Sebastian	Lerma
Gapp	Aneta	Seeton	Faith
Garcia	Citlalli	Seiler	Carl
Garcia	Donnarae	Self	Nickolas
Garcia	Gabriel	Sellers	Shanna
Garcia	Joe	Selover	Rick
Garcia	Lavonda	Semenza	Angie
Garcia	Martin	Semler	Shelley
Garcia	Maryann	Sendek	Anthony
Garcia	Rachel	Sendek	Tony
Garcia	Robert	Seratt	Jackie
Garcia-Mendoza	Gabriela	Serrano	Hilda
Gardner	Ester	Sesulka	Jennie
Gardner	Helen	Seumanutafa	Talosaga
Garland	Lisa	Seybert	Terry
Garnett	Alvin	Shade	Mitch
Garnica	Ramon	Shafer	Carolyn
Garrison	Kimberly	Shapiro	Eve
Gary	Delaina	Sharpe	Susan
Garza	Lucas	Shaw	Marilyn
Gasca	Roberto	Shearer	Linda-M

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Gastello	Lupe	Shedrick	Wyatt
Gaumont	Cora	Sheele	Verna
Gavrilovic	Mick	Shehan	Ritsuko
Gay	Diane	Shelley	Brannon
Gayden	Delores	Shepherd	Abe
Geer	Patricia	Sherer	Rustyn
Gegeanis	Luanne	Sherman	Charles
Gehrdes	Mary	Sherman	Jesse
Gemmell	Joshua	Sherry	Bethany
George	Irene	Shimek	Pam
George	Rudy	Shipman	Joy
Gerkin	Josh	Shoemaker	Cathy
German	Rosa	Shook	Bobby
Germano	Mary	Shor	Joshua
G-Escarcega	Frank-L	Shreve	Douglas
Geyman	David	Shrum	Tabi
Gibson Scott	Mary	Shuffler	Jacob
Gil	Norma	Shulman	Fred
Gilbreth	Kevin	Shulman	Rhoda
Gill	Jerry	Shuman	Sonja
Gillespie	Cynthia	Sibley	Floyd
Gilliam	Brett	Sickle	Michael
Gilson	James	Siddons	Gary
Giltz	Alina	Sigala	Dolores
Gingold	Janet	Sikora	Louise
Gipple	Elizabeth	Silva	Jim
Givens	Thomas	Silver	Jonathan
Glazman Phd	Jerry	Silvera	Diane
Glenn	Kevin	Silverman	Susan
Glogowski	Patricia	Simkins	Lenneau
Goette	J.	Simko	Marti
Goff	Janet	Simmons	David

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Goindra	Indrawati	Simmons	Derek
Goldman	Samuel	Simms	Val
Goldstein	Kim	Sinclair	Marie
Golser	Wolfgang	Sing	Ted
Gomez	Antonio	Singh	Ravindersingh
Gomez	Donna	Singler	Robert
Gomez	Jesse	Sinkar	Nathan
Gomez	Jim	Sipp	Carissa
Gomez	Martina	Sipp	Joseph
Gomez	Nicole	Sircker	Ariel
Gomez	Pete	Sisk	Nelda
Gomez	Rene	Sisk	Tammy
Gomez	Robert-M	Sisneros	Julian
Gonez	Barbara	Sivley	Linda
Gonsales	Lexi	Skjerping	Katy
Gonzales	Bernice	Skousen	Molly
Gonzales	Francene	Slate	Audra
Gonzales	Karon	Slaughter	Ronny
Gonzales	Lorenzo	Sledge	Duane
Gonzales	Ruben	Sloan	Austin
Gonzalez	Alfonso	Sluka	Aileen
Gonzalez	Camille	Smith	Albert
Gonzalez	Debra	Smith	Bobbie
Gonzalez	Diana	Smith	Charmaine
Gonzalez	Jodi	Smith	Dana
Gonzalez	Kris	Smith	Douglas
Gonzalez	Penny	Smith	Ernie
Gonzalez	Valerie	Smith	Jessica
Goodall	Kim	Smith	John
Goode-Belland	Cynthia	Smith	Kevin
Goodpasture	Bryan	Smith	Lawrence
Googins	Tina	Smith	Leonard

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Gordon	Lonny	Smith	Marilyn
Gossen	David	Smith	Patricia
Gottfried	Patricia	Smith	Pauline
Gowan	David	Smith	Rober
Goyne	Nancy	Smith	Robert
Grabecz	Laszlo	Smith	Samson
Graf	Randy	Smith	William
Graf	Robert	Smock	Hennie
Graham	Donna	Snyder	Ray
Graham	Fergus	Snyder	Sharon
Graham	Heth	Solano	Olga
Grant	Carole	Solberg	Tim
Grant	Casa	Solis	Mary
Gravel	John	Sollenberger	Stephen
Graves	Stephanie	Solomon	Kristy
Greenough	Robert	Somers	Joe
Greer	Helen	Somers	Theresa
Gregg	Gene	Sonderegger	Kimberley
Grendahl	James	Sooter	David
Greven	Jeannie	Sopsher	Lisa
Greyeyes	Everett	Sorensen	Mary
Grieger	Lydia	Sorenson	Ronald
Griffin	Gail	Sorrels	Julie
Grigel	Eric	Sorri	Mari
Grijalva	Adelita	Soto	Hector
Grijalva	Jose	Soto	Juan
Grimm	Sara	Soto	Kimberly
Grinnell	Rick	Soto	Roman
Grizz	Grizz	Southern	Terrence
Grossman	Jason	Southward	Edwin
Grotjan	Robin	Spadaro	Karen
Grove	Corinne	Spahr	Sheryle

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Guay	Joseph	Speas	Gary
Guerra	Matilda	Spector	Ken
Guerra	Patricia	Spellmon	Lois
Guerrero	Johnny	Spence	Czigany
Guild	Richard	Spencer	Heather
Guillen	Yare	Spencer	Patricia
Gungor	Nancy	Spencer	Stewartg
Gurrola-Loya	Carlos	Speth	Vanessa
Gustke	Dayna	Spies	Charles
Gutierrez	Candelario	Spies	David
Gutierrez	Carlos	Spilman	Charles
Gutierrez	Daniel	Spomer	Henry
Gutierrez	Nancy	Spotts	Richard
Gutierrez	Rhiannon	Springfield	Brandy
Gutierrez	Richard	Sproul	Leah
Guzman	Dalia	Spurlock	Sharon
Guzman	Jesse	Staatz	Viola
Guzman	Jorge	Stabile	Michael
Gwilliam	Dale	Stack	Charles
H. Gill	Jerry	Staffenson	Gayle
Haas	Deborah	Stalder	Linda
Hackman	Debra-Ann	Stanaski	Carri
Hagood	Joshua	Stands	Kelly
Haight	Helen	Stanton	Jordan
Hakimian	Oscar	Stark	Arthur
Hall	Gene	Starr	Sharon
Hall	Joan	Start	Renate
Hall	Justin	Stave	Larry
Halleck	Julie	Stclair	Bryce
Halley	Bret	Steadman	David
Halley	Dirk	Stebbins	Stacie
Hamilton	Justin	Steele	David

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Hamilton	Tina	Stella	Espinoza
Hammerich	Raymond	Stellar	Joni
Hammond	Anthony	Stenson	Jennifer
Hand	Mitchell	Stephens	Beverly
Handley	Amy	Stephens	Victoria
Hanin	Greg	Stephenson	Steven-D
Hanks	Rachel	Stevens	Ashton
Hannagan	Tom	Stevens	Doris
Hanscom	Teresa	Stevens	Melody
Hansen	Carol	Stevens	Sandra
Hanson	Dedi	Stewart	Christopher
Hanus	Michael	Stewart	Elmer
Harding	Maureen	Stewart	Jim
Hardy	Ruth	Stewart	Rita
Harig	Pamela	Stewart	Roy
Harmon	Douglas	Still	Carl
Haro	Lisa	Stirgess	Jamie
Harp	Tamatha	Stockburger	Paul
Harrington	Wayne	Stolte	Kimberly
Harris	Jerald	Stout	Lisa
Harris	Kathy	Stow	Bobby
Harris	Lynn	Strang	James
Harris	Marilyn	Strazzulla	Frank
Harris	Michael	Stricker	Gretchen
Harrison	Keith	Stroder	Joy
Hart	Robin	Strother	Jean
Hart	Stanley	Struthers	Dave
Hart	Stanley	Stueber	Gregory
Hartman	Gary	Stukenberg	Yvonne
Hartzell	Jodi	Stults	Marilyn
Harwood	Nicole	Sturges	Charles-Sturges
Hauff	Steven	Sullivan	Arlesha

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Hawes	Leslie	Sullivan	Tyler
Hawks	Dennis	Summer	Rebecca
Hay	Sydney	Sundt	Clint
Hayes	Donna	Susan	Toevs
Hayes	Martin	Sutton	Mark
Hazelberg	Marion	Swartz	Abby
Hbbnea	Ybhanh	Swartz	Maria
Hearn	Daniel	Sweat-Jr	Allen
Heetland	Darrel	Sweeney	John
Heisey	Gregory	Sweeney	Ryan
Helgath	Nancy	Swift	Carl
Hellin	Stephen	Swonson	Pollyann
Hemphill	Joseph	Swoyer	Alana
Hendel	Ed	Syverson	Cindy
Henderson	Harry	Tahija	Laurie
Henderson	Wr	Talaga	Carol
Henderson Jr	Harold	Tanksley	James
Hendricks	Frank	Tanori	Prospero
Hendrickson	Peggy	Tarango	Brooke
Hendrickson	Raymond	Tarango	Richard
Hennessey	Christine	Tarbox	Dale
Henry	Susanna	Tarvin	Lakeesha
Henson	Shawn	Tate	Janice
Herbert	Harold	Tatum	Loriann
Herbin	Carol	Tatum	Tina
Heredia	Gerardo	Tauro	David
Herman	Nadia	Taylor	Chelsea
Hermann	Jeffrey	Taylor	David
Hernandez	Aluce	Taylor	Dean
Hernandez	Antonio	Taylor	Donald
Hernandez	Christina	Taylor	Katherine
Hernandez	Elena	Taylor	Kathleen

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Hernandez	Emilio	Taylor	Lynne
Hernandez	Ivan	Techuey	Markmark
Hernandez	Jorge	Tellez	Laura
Hernandez	Julian	Tellez	Paula
Hernandez	Miguel	Tennant	Doris
Hernandez	Steve	Terwilliger	Erin
Hernandez	Steven	Tessa	Collins
Hernandez	Tomijo	Thayer	Steve
Herrera	Eduardo	Theberge	Rocky
Herrera	Jovanna	Thomas	Barry
Herrera	Latricia	Thomas	Dorthea
Herron	Lisa	Thomas	Dwayne
Hesh	Suzanne	Thomas	Nathan
Hester	Sheryl	Thomas	Patrica
Heule	Greg	Thomas	Teresa
Hickman	Deidre	Thomas	Tom
Hicks	Manuela	Thompson	Jeffrey
Hicks	Tom	Thompson	Kirby
Hill	Jeffrey	Thompson	Michael
Hill	Kenneth	Thompson	Robert
Hilliard	James-Junior	Thompson	Sidra
Hilton	Marci	Thompson	Stephanie
Hiney	Bonnie	Threat	Charles
Hoehne	Jamie	Tiller	Thomas
Hoerr	Andrea	Tilly	Cheryl
Hoeschen	Williamwilliam	Tirone	Steve
Hoffman	Michael	Tllez	Sandra
Hogan	William	Todd	Audrey
Hohn	Helene	Todd	Malinda
Holguin	Ariel	Toddy	Stella
Holland	Calvin	Tolf	Claudia
Holland	Nicholas	Tony	Freeman

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Holsman	Kari	Topping	Rollie
Hope	Annalisia	Tornatore	Jayme
Hopkins	Catherine	Torrens	Virginia
Horn	Warren	Torres	Mario
Hornell	Alan	Torres	Monica
Hornsby	Monty	Torres	Roberta
Horton	Alicia	Townsend	Gary
Horton	Joan	Trame	Jessamyn
Hoskins	Scott	Traufler	Anna
Hovdal	Larry	Trautmann	Jane
Howard	Lisa	Treadway	Olevra
Huddy	Paul	Trent	Bradley
Hudson	Patricia	Trotter	Patrice
Huerta	Elena	Trotter	Sandra
Huez	Raquel	Trulove	Clara
Huffine	Larry	Truong	Tan
Huffman	Bryan	Trusty	Cheryl
Huffman	Wendy	Tsalabounis	Anastasio
Hughes	Darin	Tubb	Jo
Hughes	Richard	Tucek	Dawn
Hunt	Dan	Turcotte	David
Hunt	Philip	Turman	Laura
Hunt	Susan	Turner	Kevin
Hunter	Keith	Turner	Sarah
Hurt	Allen	Turner	Shiryal
Hurtado	Pedro	Turner	Tom
Husband	Susan	Turney	Gail
Husk	Lj	Uhlmann	Jennie
Hutchins	James	Upchurch	Irma
Hutchinson	Allen	Ure	James
Hutchinson	Lee	Ure	Olivia
Hutchinson-Muri	Donna	Valdez	Alicia

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Hyatt	Billie	Valdez	Carla
Hynes	James	Valdez	Stephen
Ibarra	Josefina	Valdiserri	Michael
Ibarra	Serafina	Valencia	Arthur
Iclozan	Mircea	Valencia	Vanessa
Illies	Stephen	Valenzuela	Aracely
Ing	Wendy	Valenzuela	Gail
Ingram	Betty	Valenzuela	Guadalupe
Inouye	Lindsey	Valenzuela	Samuel
Iwens	Linda	Vallahue	Katie
J Gargas	Norma	Van Heukelem	Delia
Jack	Harriet	Vanden-Akker	Janice
Jackson	Audrey	Vanderwende	Dianne
Jackson	Christina	Vargas	Nestor
Jackson	Cindi	Varner	Robert
Jackson	Clifford	Vasquez	Jorge
Jackson	Earnest	Vasquez	Katrina
Jackson	Lorraine	Vasquez	Sandra
Jackson	Neal	Vassallo	Debra
Jackson	Wilbur	Vaughan	Robert
Jackson	William	Vaughan	Stephen
Jacobs	Ben	Vaughn	Annie
Jacobs	Gerald	Vaughn	Ricardo
Jacobs	Tonya	Vazquez	Michael
Jacome	Alex	Vega	Alexis
Jacques	Irma	Vega	Lewis
Jacques	Tony	Vela	Tzetzangari
Jaime	Debbie	Velasquez	Catherine
Jake	Rykayo	Velasquezmontoya	Jonathan
Jalbert	Bruce	Velez	Golda
James	Evan	Venters	Darren
James	Jonathan	Veo	Debra

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Janzen	Nancy	Verbal	Paul
Jaravata	Romeo	Verge	Colleen
Jarvis	Loren	Vergopia	Anthony
Jasuta	Beverly	Verwys	Trian
Jaurigue	Alma	Vesledahl	Aaron
Jean	Christie	Vickers	Jean
Jenkins	Henry	Vidalez	Lupe
Jensen	Paul	Vigil	Whitney
Jerez	Sean	Villa	Angelia
Jesus	Michael	Villa	Maggie
Jimenez	Josafat	Villagran	Fermin
Jimenez	Robert	Villegas	Juanita
Jimenez-Guzman	Fernando	Vinci	Micheal
Jodoin	Edmond	Vindiola	Cecilia
Johns	Rochelle	Viso	Peyton
Johnson	Albert	Vivian	Bryan
Johnson	Angela	Voelker	John
Johnson	Bonnie	Vogel	Gregg
Johnson	Bryan	Volquardts	Tammi
Johnson	Caleb	Votava	Kim
Johnson	Carla	Wagner	Dane
Johnson	Cathryn	Wagner	Sharon
Johnson	Christopher	Walden	Nan
Johnson	Dafne	Walker	Richard
Johnson	Dan	Wall	Myrna
Johnson	Jed	Wallace	Dennis
Johnson	Joseph	Wallace	Kay
Johnson	Joshua	Wallace	Matt
Johnson	Julie	Wallace	Nowell
Johnson	Kayelynn	Wallace	Trina
Johnson	Lavonda	Wallin	Stephanie
Johnson	Layne	Walsh	Aaron

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Johnson	Lucy	Walter	Nancy
Johnson	Margie	Ward	James
Johnson	Mark	Ward	Rebecca
Johnson	Pandora	Wardell	Maya
Johnson	Patricia	Ware	Leslie
Johnson	Rick	Wareham	Ramona
Johnson	Stephanie	Warren	Robert
Johnson	Tina	Washington	Cleveland
Johnston	Jenee-R	Waters	Ryan
Johnston	Lisa	Waters	Shane
Johnston	Patrick	Wathogoma	Andrea
Johnston	Sue	Watkins	Shelli
Joji	Mary	Watson	Dawn
Jones	Brandi	Watters	Lolita
Jones	Cathy	Weaver	Bill
Jones	Junie	Webb	Brenda
Jones	Ladene	Webb	Carl
Jones	Lisa	Webb	Jane
Jones	Martha	Webb	Wesley
Jones	Mary	Weber	Joan
Jones	Paul	Webster	Shirley
Jones	Robert	Weekly	Joseph
Jones	Sarah	Weeks	Maureen
Jones	Sheron	Weger	John
Jones	Susan	Wehrmeister	Judith
Jones	Vanessa	Weinberg	Henry
Jones	William	Weisner	Rachel
Jongsma	Garrett	Weiss	Cynthia
Jordan	Fiona	Weitzel	Cathaleen
Jordan	Stanley	Welch	Anna
Jose	Verlon	Welch	David
Jose-Burgos	Juan	Welch	Linda-D

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Joyce	Jollenej	Wellenstein	Mark
Juan	Goldie	Weller	Judith
Juarez	Christina	Wells	Neil
Juarezbueno	Fidel	Wells	Tiffany
Judd	Delia	Welton	Diaz
Judd	Shavar	Wennerholm	Cherie
Julez	Julez	Wenrick	Peggy
June	Stephanie	West	Michael
Jurkowski	Jerome	Westbrook	Kristen
Jurs	Laurie	Westmoreland	Eddie
Kadrich	Peter	Whalen	Diane
Kagan	Dina	Whiddon	Anna
Kahite	Sango	Whitbey	Gary
Kaimer	Frank	White	Dan
Kalter	Samuel	White	Gail
Kamprud	Mark	White	Gary
Kane	Walter	White	Paul
Kaplan	Matthew	White	Rich
Karba	Steve	White	Robert
Kasa	Scarlet	Whitehead	Mary
Kasik	Elizabeth	Whitehead	Michael
Katcher	Jennifer	Whitford	Joszett
Kathryne	Mary	Whitley	Eric
Katzin	Lois	Whitlock	Jim
Kay	Dianne	Wicker	Cyndy
Kay Gilliland	Mary	Wicker	Ty-Ty
Kaye	Bobby	Wicker	Wynne-Dieppe
Kee	Sadie	Wickliff	David
Keener	Judd	Wilcox	Dennis
Keith	Marshall	Wiles	Mary
Kelly	Catherine	Wilkerson	James
Kendrick	Debbie	Wilkinson	Ted

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Kennedy	James	Willard	Steven
Kenny	Daniel	Willbrandt	Michael
Kenyon	Deborah	Willden	Shannon
Keplinger	Thomas	Williams	Brrtt
Kerns	Rosalva	Williams	Catherine
Kerr	Theresa	Williams	Gary
Kesselring	Greg	Williams	Ginger
Key	Maggie	Williams	Glorina
Kidney	Kris	Williams	James
Kienle	Klaus	Williams	Jill
Kimball	Glenna	Williams	Jo
Kimzey	Sandra	Williams	Julia-M
King	Betty	Williams	Kale
King	Fran	Williams	Kerri
King	Jody	Williams	Linda
Kinkade	Linda	Williams	Mark
Kinkelaar	Rodney	Williams	Nancy
Kinnett	Kevin	Williams	Susie
Kinnison	Allen	Williams	Timothy
Kirkland	Lon	Williamson	Kathleen
Kissinger	Carole	Williford	John
Kitts	Charles	Willingham	John
Klama	Staci	Wilson	Aileen
Klastow	Lane	Wilson	Almonyonna
Klein	Wilma	Wilson	Carylee
Kleiner	Brian	Wilson	David
Kluevein	Carrie	Wilson	Deshanna
Kluge	Carol-Jones	Wilson	Erin
Kmiecik	Linda	Wilson	Ltanya
Knoedler	Dan	Wilson	Milada
Knox	Thomas	Wimby	Erica
Kobel	Joseph	Windus	Donald

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Kobielusz	Connie	Wines	Ronald
Kocher	Brandon	Wingett	Sherry
Koenigsfeld	Debbie	Winkler	Linda
Kohloss	Eleanor	Winner	Free
Komenko	Catherine	Winsberg	John
Koontz	James	Winslow	Ronald
Korn	Ben	Winsten	Dennis
Kosse	Tim	Winston	Donnell
Koven	Edward	Wisdom	Janet
Kowalski	Nancy	Witkowski	Kathleen
Kramer	Kris	Witkowski	Lisa
Krass	Janet	Wittenbreder	Ernest
Krause	Sandra	Woerner	John
Kraushaar	Nancy	Wohlford	Joseph
Kreamalmeyer	Edgar	Wolfram	Mark
Krinsky	Rhonda	Wolk	Robert
Kriskovich	Matt	Wolter	Elaine
Kruger	Fritz	Womack	Thomas
Kudrayjr	Jack	Woodbury-Kuvik	Patricia
Kuhns	Scott	Woody	Robert
Kulbeth	Alex	Worcester	Caryn
Kwasny	Jen	Worley	Dale
Laake	Edward	Worrells	Tammy
Lacy	Gyff	Wortley	Lynne
Lafrance	Vincent	Worz	Karen
Lamb	Debby	Wright	David
Lamb	Glenn	Wright	Joseph
Lambert	Cathy	Wubker	Diana
Lampe	Glenn	Wullkotte	Cody
Landreth	Larry	Wyatt	Meliss
Lane	Bryan	Xavier	Mitchell
Lange	John	Yard	Jessica

Commenter Last Name	Commenter First Name	Commenter Last Name	Commenter First Name
Langer	Linda	Yates	Blair
Lapointe	Paul	Yazzie	Beverly
Lara	Jose	Yazzie	Christian
Lara	Martin	Yazzie	Stephanie
Lara	Raul	Yeager	Charles
Larios	Eric	Yeager	Michael
Larrison	Stephanie	Yetter	Shelly
Larson	Kathy	Youmans	Adele
Laschiava	Dona	Young	Cynthia
Lathon	Autumn	Young	Jonathan
Lawrence	Brandon-Lawrence	Young	Richard
Lawrence	Cheryl	Yozwiak	Stephen
Laye	Tracy	Yribe	Steven
Laynie Drenske	Karoel	Yule	Kelsey
Layton	Willis	Zaire	Imani
Lcuky	Robin	Zako	Joseph
Leal	Josephine	Zanger	Maggy
Leatherman	Mary-Jane	Zaragoza	Oscar
Ledbetter	Mary	Zarate	Ruben
Lee	Mary	Zaso	Deanna
Lee	Pete	Zecchino	Theresa
Lee	Phefe	Zee	Kara
Legault	Stacey	Zegler	Alan
Legge	Danielle-Leona	Zepeda	Twila
Leibovitz	Sally	Ziamba	Francesca
Leigh	Carolyn	Zucco	Tony
Lele	Andrei		