ENERGY FUELS RESOURCES (USA) INC
CLASS II AIR QUALITY PERMIT NUMBERS 62877, 62878, 63895 FOR THE CANYON, EZ, AND ARIZONA 1 MINES, RESPECTIVELY

INTRODUCTION

Class II Air Quality Permit Numbers 62877, 62878, and Permit Revision 63895, issued to Energy Fuels Resources (USA) Inc., by the Arizona Department of Environmental Quality (ADEQ) are for the underground mining of uranium ore at the Canyon, EZ, and Arizona 1 mines respectively. The EZ and Arizona 1 mines are located north of Grand Canyon National Park approximately 35 miles southwest of Fredonia, and the Canyon Mine is located south of the Park approximately 6.5 miles southeast of Tusayan. No ore processing will be conducted on-site. The ore will be shipped to an off-site processing mill in Blanding, Utah. If the ore cannot be shipped immediately to the mill, it will be placed in nearby stockpiles. Emission sources at the facilities include: mine vent shafts, emergency generators, and fugitive dust emissions from storage piles and haul trucks. The mine vents are subject to federal limits for radiation exposure from radon and the emergency generators are subject limits on operating hours. Fugitive emissions from the storage piles will be controlled by covering or stabilization, and the size of the stockpiles is limited by the permit. Dust emissions from haul trucks will be controlled by completely covering and securing the loads and limiting the speed of the trucks on unpaved roads.

PUBLIC PARTICIPATION PROCESS

ADEQ initially opened the public comment period from December 2, 2015 to January 4, 2016. After the comment period concluded, ADEQ was made aware of elevated uranium concentrations in the soil near the Pinenut mine. ADEQ decided to revise the permits to make the permits more environmentally protective, and hold a second public comment period subsequently. Written comments were received during this time, but no public hearing was conducted.

The second public comment period ran from July 28, 2016 to August 30, 2016. Three public hearings were held to solicit public comments on the draft permits: August 29, 2016, at the Fredonia High School; August 30, 2016 at the Moenkopi Legacy Inn & Suites in Tuba City; and August 30, 2016, at the Sinagua Middle School in Flagstaff, Arizona. Written and verbal comments were received during the public comment period and at the public hearing.

This summary presents the Department's responses to the oral and written comments received during both public comment periods.

General Comments:

1. One commenter asked the Department to hold public hearings in Flagstaff and Tuba City.

This comment was received during the first comment period. The Department held public hearings in Fredonia, Flagstaff and Tuba City, Arizona during the second comment period.

2. One commenter asked the Department to extend the public comment period.

This comment was received during the first comment period. Together with the second comment period, the draft permits were available for comment over 60 days.

3. **A commenter stated that the Arizona Revised Statures in §49-401 specifically state that no further degradation of the air in the State of Arizona by any industrial polluters shall be tolerated.**

Arizona Revised Statutes 49-401.B declares the policy of the Arizona Legislature to be that no further degradation of the air shall be tolerated. This subsection goes on to say "A new industry hereinafter established shall not begin normal operation until it has secured a permit attesting that its operation will not cause pollution in excess of the standards set by the director of environmental quality." This language clarifies the intent of the Legislature to be that new industries are not precluded from operating in Arizona, but that they must first demonstrate to the Department that they will meet all applicable air quality environmental regulations. Through the initial air permitting process, Denison (EFRI's predecessor) was required to conduct an ambient air dispersion model and a visibility analysis during the initial permitting (in 2011) to ensure that emissions from the mines would not cause or contribute to an exceedance of any ambient air quality standards or cause visibility degradation.

4. **Several commenters stated that ADEQ should consider new information about harms from uranium mining prior to issuance of the permits.**

State law requires the Department to issue permits if the applicant is able to demonstrate that they will comply with all applicable environmental regulations. As part of the public comment period, no new information was introduced to support any notion that the facilities or the draft permits would result in the violation of any applicable environmental laws.

5. **A commenter stated that uranium mines are "often harder and costlier to clean up than anyone expected."**

State law requires the Department to issue permits if the applicant is able to demonstrate that they will comply with all applicable environmental regulations. The comment does not pinpoint any specific issues regarding clean-ups or why the permits should not be issued.

6. **A commenter stated that there were elevated uranium concentrations within the Canyon and EZ Mines monitoring and water well. Several commenters expressed concern about mining effects to groundwater and surface waters.**

State law does not allow for the consideration of non-air quality related concerns in the air permitting process.

7. **Several commenters noted the presence of sites of religious, cultural, and historic significance in the area, including traditional cultural properties, such as Red Butte.**

The Department's responsibility is to protect human health and the environment. The Air Quality Permit will ensure that the air is safe to breathe. State law does not allow the Department to include non-air quality requirements in the processing of these permits; however, EFRI is required to meet any and all other applicable state and federal requirements for protecting these resources and properties.

8. A commenter stated that it was ADEQs duty "to protect the Grand Canyon region by requiring the most rigorous air quality standards within its discretion and consistent with the federal Clean Air Act."

The Air Quality Permits represent the appropriate regulation allowed by State and Federal law, and are designed to maximize environmental protection.

9. A commenter noted that the Technical Support Document (TSD) for the EZ mine is in error, and that the introduction appears copied from the Canyon mine TSD. The commenter continued that the copy/paste suggest ADEQ's review of the mine is a "rubber-stamp" process.

This comment was made in the first public comment period. The Department acknowledges and regrets the error. The error was corrected before the second public comment period. The Department believes the analysis in these documents are accurate and comprehensive.

10. Several commenters asked the Department to wait to issue the EZ mine permit until the mine Plan of Operations is issued.

State law does not allow the Department to consider non-air quality requirements in the processing of this permit.

11. A commenter stated that Grand Canyon National Park is a Class I area, and the mines are all nearby. Therefore, the Department should consider this in its permitting decision.

The Department recognizes that GCNP is a Class I area, and had included some Class I area dispersion modeling in its initial permitting.

12. A concern was raised that the Department relied upon outdated information and documentation, including outdated environmental impact statements, in considering the permit applications.

The Department recognizes that several documents from the 1980s and 1990s are available as background information for the mines; however, the Department did not rely upon any of these documents in drafting the Air Quality Permits. State law governing the Air Quality Permits required EFRI to submit complete applications for these permits, containing all of the information ADEQ needed to evaluate whether the mines could be operated in compliance with all applicable environmental laws.

13. A commenter stated the Department should conduct new studies that take into account the changes that have occurred at the site in the past 20 years, including drought-induced plant mortality, off-road vehicle use, and invasion of the area by local bison-hybrid herds increase dust mobility.

State law requires the Department to issue permits if the applicant is able to demonstrate that they will comply with all applicable air quality regulations. The department is not required to conduct new research in making a licensing decision. The Department is issuing these permits based on a thorough review of best available data.

14. A concern was raised that the permit did not indicate how the operating hour limit for the generators would be enforced.

The permit contains a requirement that EFRI keep records of the operating hours of each engine, that those records be presented to the Department upon request, and that a non-resettable hour meter be installed on the engine prior to operation. The Department believes these requirements are sufficient for enforcing the operating hour limit.

15. Several commenters expressed concern regarding the self-monitoring requirements in the permit and felt an independent third party should monitor the facility.

State law does not allow the Department to require the use of third parties to conduct monitoring and recordkeeping. The Air Quality Permits require EFRI to conduct various monitoring actions and keep detailed records of the actions. In addition, the Department will conduct inspections of the mine site and verify that all Air Quality permit requirements, including monitoring and recordkeeping, are being met.

The company is required to report the results of monitoring to ADEQ semi-annually which includes a certification regarding the compliance status of the facility.

If there are concerns that the company is not complying with permit requirements, the Department can be notified through its complaint web site at http://www.azdeq.gov/function/compliance/complaint.html or through the air quality compliant line, (602) 771-2286.

16. Several commenters expressed concern regarding the EFRI's compliance history with MSHA and EPA and asked that the company be subjected to closer scrutiny and attention and be required to do additional site characterization, monitoring, and sampling.

State law does not allow the Department to base licensing decisions on compliance history with other agencies. However, these permits contain increased monitoring requirements, and the Department can increase inspection frequency based on compliance history.

17. A commenter suggested that the Department should monitor for fine particulate matter ($PM_{2.5}$) near the mining sites and along the haul road. The commenter expressed concern that $PM_{2.5}$ presents a health concern considering the hazardous and radioactive properties of the dust.

Fine particulate matter ($PM_{2.5}$) refers to particulate matter that is 2.5 microns and smaller. The Department agrees that fine particulate matter presents a health concern, however, $PM_{2.5}$ is not a pollutant of significant concern at these facilities. The majority of particulate emissions from the mines and haul roads will be in the form of fugitive dust from material handling and haul truck travel. These types of emissions are generally larger than 2.5 microns. The permit requires EFRI to conduct soil sampling around the mine and test for uranium ore dust. Also, the permits require EFRI to ensure that all haul trucks be securely covered from all sides. This will prevent dust from escaping from the truck and will prevent contamination from occurring.

18. A commenter stated that ADEQ cannot rely upon AERMOD (an air quality modeling tool) to model dust dispersion because AERMOD is designed to model plume dispersion, not dust dispersion.

While modeling was conducted during the initial licensing decision for these permits, no modeling was conducted for these renewals because permitted emission rates have not changed. AERMOD is the EPA approved and preferred model for a wide range of regulatory applications in all types of terrain. While the Department agrees that the model has its limitations, the model is designed to be conservative, and typically over predicts impacts. Since there are currently no additional EPA approved models for estimating local impacts, ADEQ has determined that the use of AERMOD to model dust dispersion was appropriate.

19. A commenter stated that ADEQ should conduct its own air quality dispersion modeling analysis and not rely on Denison's modeling. Furthermore the commenter stated that the analysis should undergo scientific peer reviewed prior to issuance of the permits.

The modeling analysis conducted during the initial permits by the facility was reviewed and approved by ADEQ. The analysis used an approved EPA model that is used extensively to measure the impact of air pollution from various types of facilities including mining sites. Since the dispersion modeling was conducted using a conservative EPA approved model, no additional rounds of modeling was performed by ADEQ.

20. A commenter stated that ADEQ should conduct its own monitoring at the site, and that the permit should include a system where exceedances, if and when detected, trigger additional dust mitigation measures.

The air quality permit requires EFRI to conduct soil sampling and gamma radiation monitoring around the mine. Additionally, EFRI must maintain records of, and report to ADEQ, all results and quality assurance data. ADEQ believes this is sufficient oversight of the monitoring program.

The permit also includes as system where exceedances trigger additional dust mitigation measures, such as: reduction of stockpile size by 50%, construction of wind barriers, or tarping of storage piles to reduce emissions.

21. A commenter expressed a concern that the Department failed to consider "potentially life-threatening" radiation exposures, and felt that the Department's action to issue a permit to the mines was indicative of a lack of federal oversight by the United States Nuclear Regulatory Commission.

The Department has inserted conditions into the permit to control uranium dust and radon generated by the mine, which is an adequate surrogate for controlling radiation exposure. The commenter is correct that the Department has no relationship, subordinate or otherwise, with the Nuclear Regulatory Commission (NRC). The NRC does not regulate uranium mines.

22. Several commenters stated that tribal communities potentially affected by these mines are environmental justice populations.

The United States Environmental Protection Agency defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies".

In order to characterize the alleged environmental justice concern, the EPA's EJSCREEN 2016 tool was used to find the size and composition of the population within five miles of each mine. The output files (attached to this document) indicate that there is no one domiciled within 5 miles of the Canyon, EZ or Arizona 1 mines. Without an affected population, no environmental justice analysis can be conducted.

23. A commenter stated that tribal communities potentially affected by transportation of uranium ore through the communities are environmental justice populations.

ADEQ is unaware of any tool or guidance for determining environmental justice concerns along transportation routes. Generally, only point source emissions of air pollution are evaluated for environmental justice concerns. The permits have stipulations for the safe transport of uranium ore.

24. Several commenters expressed concern about haul trucks containing uranium ore traveling through their communities.

Based on the concerns of the commenters, ADEQ has made the requirements for tarps covering haul trucks more stringent. The tarp will be lapped over the sides of the haul truck bed at least six inches, and secured every 4 feet with a tiedown rope.

25. Several commenters requested that ADEQ require the Pinenut mine permit (Permit 62876) be renewed until comprehensive monitoring confirms that all radioactive material has been removed and that dust and other fugitive air emissions are no longer detected from the site.

Energy Fuels had submitted a timely application to renew the air quality permit for the Pinenut mine, but withdrew the application when the mine was closed. State regulations require air quality permits for facilities which emit or may emit any air pollutant. Mines which are not operating and are effectively closed cannot be required to obtain a permit.

26. A commenter requested that ADEQ require Alternate Method 082 instead of Method 9 monitoring for opacity measurements of storage pile emissions.

EPA's standard for approving cameras for Alternate Method 082 is the same as the standard for approving human observers (For a set of 25 plumes, no error of greater than 15% opacity of any one reading and the average error must not exceed 7.5% opacity). Therefore, neither method is inherently more accurate than the other.

27. A commenter expressed support for the permits and requested that the permits be issued.

ADEQ acknowledges the comment.

28. Several commenters requested that ADEQ perform an assessment of cumulative effects of radon gas, radiation, and radioactive dust in the Grand Canyon region.

State law does not allow the Department to consider results of a study like this in a permitting decision for a specific site.

29. Several commenters requested that ADEQ conduct dust, soil, and water monitoring at mines and along transportation routes until sampling confirms that the mines and transportation routes are decontaminated. A commenter requested that requirements for reclamation be inserted into the permit.

The Department believes monitoring and emission controls required by the permit is sufficient to protect public health. State law does not require the facility to obtain or maintain an air quality permit after the mine is closed, and therefore no requirements requiring decontamination can be enforced as part of the air quality permit.

30. Several commenters requested that ADEQ require the Permittee to pay for all monitoring and decontamination costs.

The Permittee is responsible for all monitoring costs while the permit is active. Post-operation activities are not regulated by the air quality permit.

31. Several commenters requested that soil sampling required by the permit be increased from annual to quarterly sampling.

Based on the concerns expressed by these commenters, ADEQ has changed the final permit to have the following soil sampling schedule: Quarterly for one year, then annually thereafter. Any reading above the trigger levels will trigger a requirement of quarterly monitoring until four quarters measurements below the trigger level are reported.

32. A commenter requested that ADEQ increase the number of soil sampling locations around the mine required by the permit from four to eight.

ADEQ has determined that four sampling locations is sufficient to indicate if on-site dust control measures are effective.

33. A commenter requested that ADEQ use dispersion modeling to determine the extent of contaminated area and require additional sampling in the event that EFRI reports an exceedance of the trigger level.

The permit contains trigger levels which trigger additional dust controls at the source if exceeded. Using a dispersion model to delineate a "contaminated area" would not be fruitful for two reasons: (1) the air quality permit are not designed to include requirements for cleanup of contaminated areas, and (2) this use of a dispersion model for this purpose is very unusual and would be prone to error.

34. A commenter requested to add to the permit a secondary fixed trigger level and identify a maximum level at which mine operations should cease.

ADEQ believes the current structure of the permit (a fixed initial trigger level with subsequent trigger levels based on the previous reading) is sufficient for the protection of air quality. ADEQ also believes the requirement of additional dust controls after each trigger is sufficient and a requirement for the shutdown of the mine is not necessary to effect the objective of minimizing wind-blown erosion.

35. A commenter requested that ADEQ include the basis for the trigger levels in the Technical Support Document.

The trigger levels are based on a report written by EFRI's consultant, Arcadis, titled *Development of the Proposed Trigger Levels for Energy Fuels' Arizona Mines (DRAFT)*. This report will be referenced in the final TSDs and is available from the Department upon request.

Briefly, the levels were developed using the following procedure:

1. Choosing a target radiation dose of 15 mrem/year, taken from the EPA clean-up level for sites subject to the Comprehensive Environmental Response, Compensation, and Liability Act (aka CERCLA, or the Superfund Act).
2. Determining the level of uranium ore dust, radon (Ra-226), and gamma radiation that would affect a dose equivalent to 15 mrem/year in a recreational camper spending up to 14 days per year at the site, and that any deposited radioactive materials would remain in the top 5 cm soil layer.
3. Setting the trigger levels at 25% of the level that would result in a 15 mrem dose, found in step 2.
4. Adding a background of 4.21 mrem/week to the gamma radiation trigger levels, based on the highest level recorded at the Canyon Mine site, prior to any ore production. The Canyon Mine site was chosen because no mining has taken place there yet. No background is added to the radon and uranium ore trigger levels.

36. A commenter requested that ADEQ increase the frequency of visible emission observations of mine vents required by the permit from bi-weekly to weekly.

ADEQ has determined that once every two week observations are sufficient for monitoring mine vents.

37. A commenter requested that ADEQ increase the frequency of visible emission observations of fugitive dust sources required by the permit from weekly to daily.

ADEQ believes weekly observations are sufficient for monitoring of fugitive dust sources.

38. A commenter expressed concern that tarps are insufficient to contain dust from mining operations.

Based on the concerns of the commenters, ADEQ has made the requirements for tarps covering haul trucks more stringent. The tarp will be lapped over the sides of the haul truck bed at least six inches, and secured every 4 feet with a tiedown rope.

39. A commenter requested that ADEQ reduce the permitted stockpile size by 75% to mitigate the potential risk for elevated radiation levels.

The current permitted stockpile limit of 13,100 tons is a significant reduction from the previous permit and has been determined as an appropriate size to minimize potential for wind-blown erosion.

40. A commenter requested that ADEQ require waste rock and ore to be removed from the site within a defined time period after the mine temporarily or permanently halts production.

The permit requires EFRI to conduct periodic monitoring of radiation and soil around the site and implement dust control measures from the start of mining operations, and for as long as the permit is in effect, regardless of if the mine is operating, temporarily or permanently halting production. Storage pile size is also limited (13,100 tons at each site). ADEQ believes these measures are sufficient to control dust, and therefore, no requirement to remove storage piles is necessary. EFRI will need to maintain the permit for as long as the storage piles are on-site.

41. A commenter expressed concern that using water to control dust emissions from storage piles would mobilize radioactive materials and facilitate their introduction into ground/surface waters.

EFRI is required to maintain an on-site impervious impoundment. All excess water will be directed to the impoundment and will be sufficient to prevent the leaching of radioactive materials into groundwater.

42. A commenter expressed concern that using water to control dust emissions from storage piles would increase storage pile erosion because the wetting/drying cycle will increase dust emissions.

ADEQ disagrees with the commenter on this point. The wetting and subsequent drying of a storage pile creates a soil crust that is more resistant to erosion, not less. Similarly, inactive storage piles emit less than active storage piles because small particles on the surface layer are rapidly eroded, leaving behind only coarser particles. These coarser particles increase the surface roughness of the pile, and prevent further erosion.

Nevertheless, EFRI has an obligation to control fugitive dust, without regard to how drying or stockpile age affect emissions. Additionally, the Department is limited the ore stockpile to no more than 13,100 tons to limit the potential for wind-blown erosion.

43. A commenter requested that all water used for dust control should be collected at the storage pond on-site.

Although not a part of the air quality permit, EFRI's aquifer protection permits require all surface water to be collected in an impervious impoundment on-site.

44. A commenter requested that haul truck washing take place off of the Canyon Mine site, preferably at the White Mesa Mill site. The commenter stated that this would prevent fine particles from spreading along the haul route.

State law does not allow the Department to insert requirements into a permit for off-site or out of state activities.

45. A commenter requested that the dust deposition on the on-site pond be included in the soil sampling required by the air quality permit.

The purpose of soil sampling is to determine if dust control measures are sufficient to prevent uranium ore from blowing off site. Monitoring inside the fenceline does not achieve this purpose.

46. A commenter stated that "waste rock" or "development rock" could not be returned to the mineshaft as stated on page 1 of the permit, based on the 1986 Forest Service Record of Decision that approved the Canyon Mine operations (p. 11).

The commenter is referencing the process description page of the permit, which does not have any enforceable requirements, but simply gives background information. The ROD for the Canyon Mine only allows barren or slightly mineralized waste rock to be replaced into mined-out workings.

47. A commenter urged ADEQ to use third party monitoring required by the Forest Service in the 1986 Final Environmental Impact Statement §2.5.10-11, instead of using monitoring conducted by EFRI.

ADEQ has no control or oversight of monitoring programs required by the Forest Service, and cannot incorporate another agencies requirements into a permit. However, EFRI may submit the same data for both programs provided they meet the requirements of each agency.

48. A commenter asked ADEQ to revise the permit to require dust control measures, such as tarping storage piles, which are currently only required if monitoring trigger levels are exceeded.

ADEQ believes that the current structure of the permit is sufficient to protect air quality. The storage piles must be watered to control dust and if this is shown to be insufficient by monitoring, then additional controls will be required, such as the reduction of storage pile size, the construction of wind barriers, or the tarping of the piles.

49. A commenter asked ADEQ to require monitoring near and far from the mine sites.

ADEQ believes the eight monitoring locations (four gamma radiation, four soil sampling) around each site is sufficient to capture the maximum impacts from the mine. Locations further away from the site will have impacts less than those quantified at the monitoring locations.

50. A commenter asked ADEQ to conduct regular inspections of the mines. Another commenter asked what ADEQ is doing to monitor contamination at the mine.

ADEQ performs regular periodic inspections of the mines, both announced and unannounced. Normally, a facility this size would be inspected once per permit term, but these mines have been inspected 13 times in the past permit term. Also, ADEQ will conduct an inspection within 90 days of the issue date of the new permits. In addition to inspections, ADEQ also reviews all reports submitted by EFRI (monitoring reports, compliance certifications, etc.).

If there are concerns that the company is not complying with permit requirements, the Department can be notified through its complaint web site at http://www.azdeq.gov/function/compliance/complaint.html or through the air quality compliant line, (602) 771-2286.

51. A commenter stated that pollution limits should be based on the impacts of air pollution and best available science, not expressed as pollution allowed per unit production.

ADEQ uses "amount of pollution per unit production" figures to determine expected emissions from a source, but in order to obtain a permit, a facility must demonstrate that the total amount of pollution emitted will not have adverse impacts, based on the aforementioned limits and assuming continuous operation (8,760 hours per year) and maximum production. If the facility cannot make such a demonstration than they must take a limit on production or operating hours. EFRI has taken permit limits on allowable hours of generator engine operation; 10,000 gallons of gasoline dispensing per year; and a stockpile storage size of 13,100 tons.

52. A commenter stated the date of the Tuba City and Flagstaff public hearings was primary election day, and asked ADEQ to review its public comment scheduling procedure to avoid such scheduling conflicts.

The State of Arizona observes 10 holidays per year. ADEQ will not schedule hearings during these holidays or on weekends. Those unable to attend a hearing, for any reason, are asked to submit written comments during the preceding 30-day public comment period. ADEQ will attempt to avoid election days in the future and regrets any inconvenience caused.

53. A commenter asked ADEQ to conduct calculations to determine mine related emissions throughout Arizona (i.e. along transport routes).

State law requires stationary sources (i.e. the mines) to obtain permits. ADEQ cannot look at off-site truck emissions when making a permitting decision.

54. A commenter asked ADEQ to conduct public educational meetings on the transport routes to be used by EFRI to transport ore from the mines to the White Mesa Mill.

The air quality permit only regulates emissions from the mine. ADEQ does not have any authority to regulate transport over public highways, and does not approve routes as part of the permitting process.

55. A commenter expressed concern regarding the impact of uranium mining around the Grand Canyon on tourism.

State law does not allow the Department to consider economic impacts in the granting or denial of air quality permits.

56. A letter was received from the United States Nuclear Regulatory Commission stating that a concerned individual had contacted them about ADEQ's permitting process. The letter asked the State to address the individual's concerns but noted

that the NRC has no regulatory authority on the permitting of uranium mines, and had no further comment.

The Department had also received a letter from the concerned individual during the public comment period, and has addressed her concerns in this responsiveness summary.

EJSCREEN Report (Version 2016)

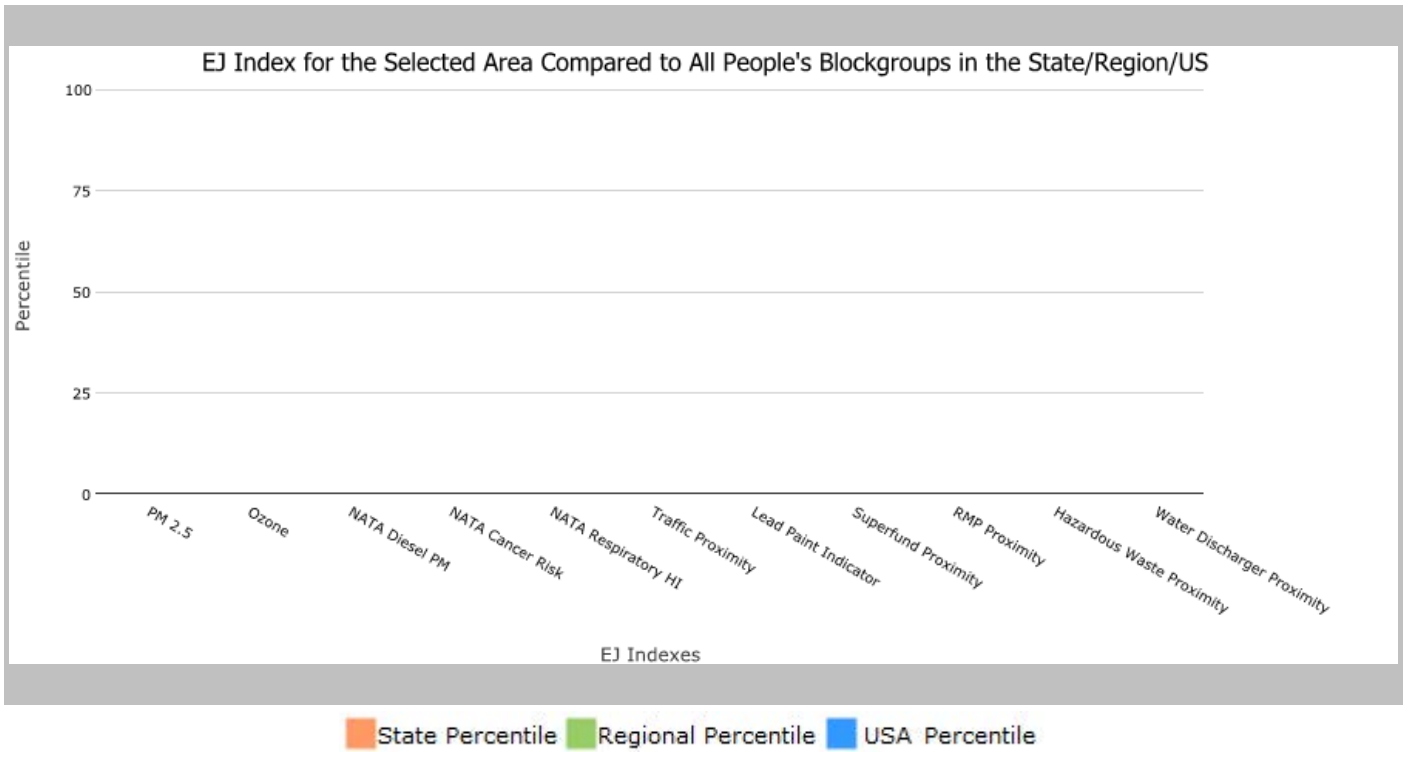
5 mile Ring Centered at 36.507908,-112.807208, ARIZONA, EPA Region 9

Approximate Population: 0

Input Area (sq. miles): 78.53

AZ1 Mine

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA* Diesel PM	N/A	N/A	N/A
EJ Index for NATA* Air Toxics Cancer Risk	N/A	N/A	N/A
EJ Index for NATA* Respiratory Hazard Index	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	N/A	N/A	N/A
EJ Index for Lead Paint Indicator	N/A	N/A	N/A
EJ Index for Superfund Proximity	N/A	N/A	N/A
EJ Index for RMP Proximity	N/A	N/A	N/A
EJ Index for Hazardous Waste Proximity	N/A	N/A	N/A
EJ Index for Water Discharger Proximity	N/A	N/A	N/A



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

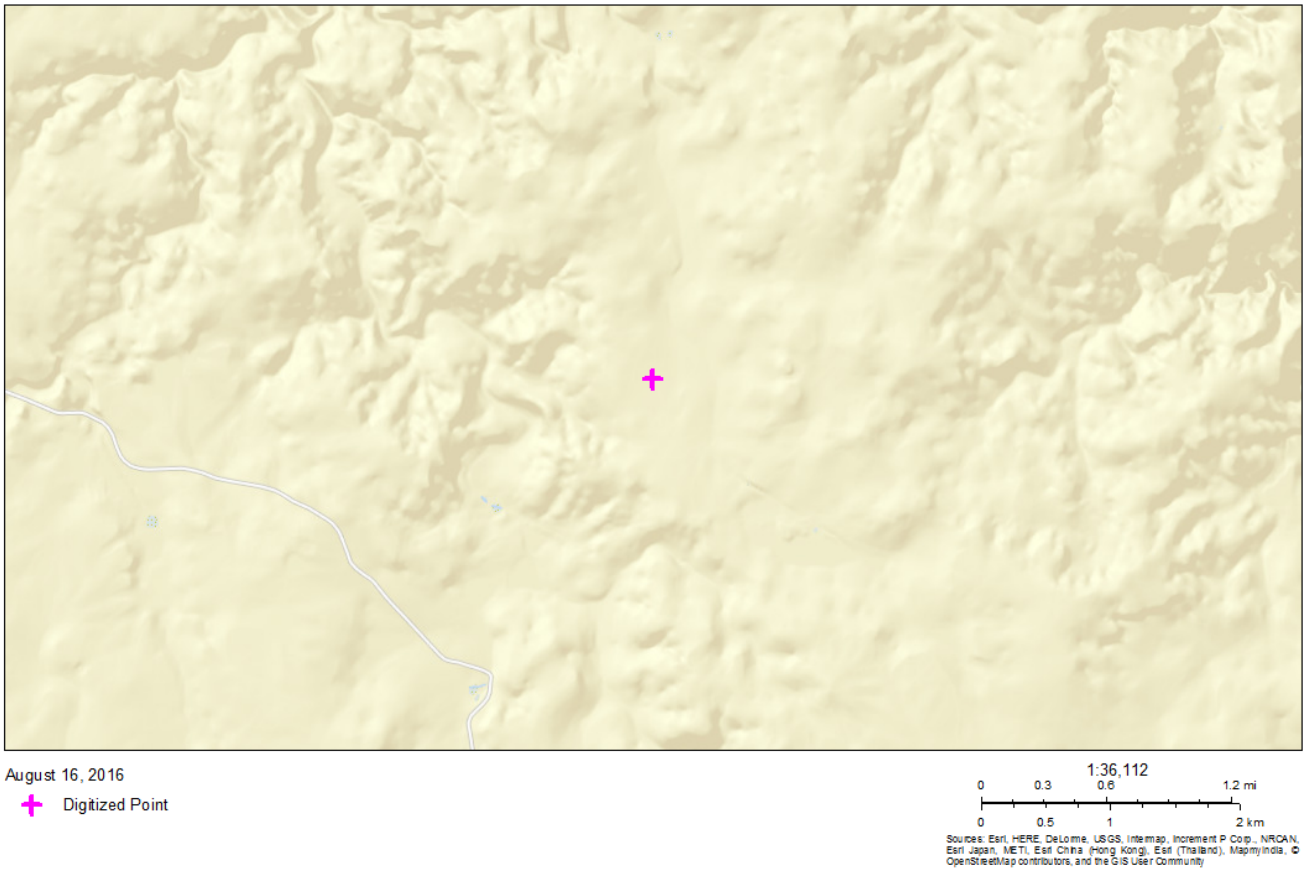
EJSCREEN Report (Version 2016)

5 mile Ring Centered at 36.507908,-112.807208, ARIZONA, EPA Region 9

Approximate Population: 0

Input Area (sq. miles): 78.53

AZ1 Mine



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)

5 mile Ring Centered at 36.507908,-112.807208, ARIZONA, EPA Region 9

Approximate Population: 0

Input Area (sq. miles): 78.53

AZ1 Mine

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	N/A	7.62	N/A	9.37	N/A	9.32	N/A
Ozone (ppb)	N/A	54.8	N/A	51	N/A	47.4	N/A
NATA* Diesel PM (µg/m^3)	N/A	1.11	N/A	0.978	N/A	0.937	N/A
NATA* Cancer Risk (lifetime risk per million)	N/A	44	N/A	43	N/A	40	N/A
NATA* Respiratory Hazard Index	N/A	1.5	N/A	2	N/A	1.8	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	N/A	830	N/A	1100	N/A	590	N/A
Lead Paint Indicator (% Pre-1960 Housing)	N/A	0.091	N/A	0.24	N/A	0.3	N/A
Superfund Proximity (site count/km distance)	N/A	0.078	N/A	0.15	N/A	0.13	N/A
RMP Proximity (facility count/km distance)	N/A	0.39	N/A	0.57	N/A	0.43	N/A
Hazardous Waste Proximity (facility count/km distance)	N/A	0.064	N/A	0.11	N/A	0.072	N/A
Water Discharger Proximity (facility count/km distance)	N/A	0.19	N/A	0.2	N/A	0.31	N/A
Demographic Indicators							
Demographic Index	N/A	41%	N/A	47%	N/A	36%	N/A
Minority Population	N/A	43%	N/A	58%	N/A	37%	N/A
Low Income Population	N/A	39%	N/A	36%	N/A	35%	N/A
Linguistically Isolated Population	N/A	5%	N/A	9%	N/A	5%	N/A
Population With Less Than High School Education	N/A	14%	N/A	17%	N/A	14%	N/A
Population Under 5 years of age	N/A	7%	N/A	7%	N/A	6%	N/A
Population over 64 years of age	N/A	15%	N/A	13%	N/A	14%	N/A

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN Report (Version 2016)

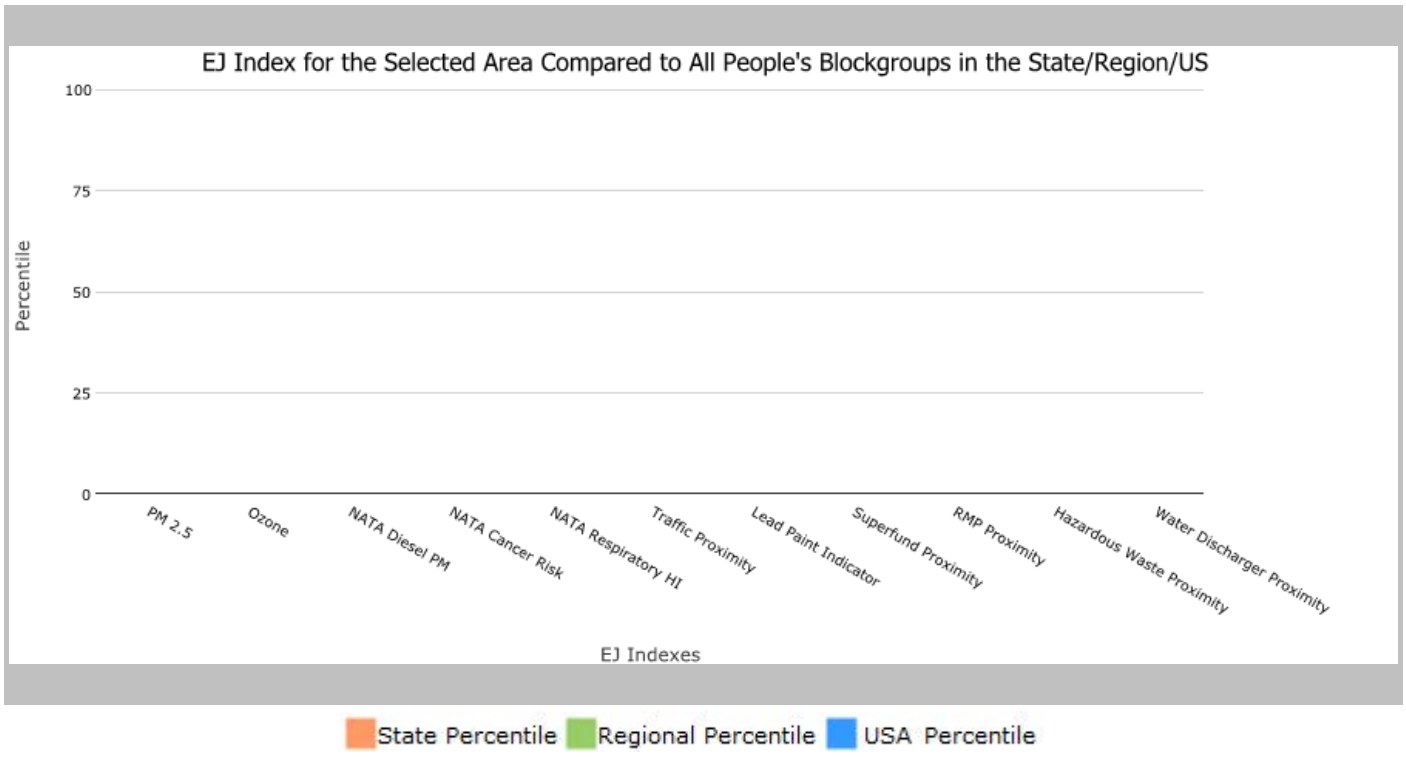
5 mile Ring Centered at 35.882777,-112.096110, ARIZONA, EPA Region 9

Approximate Population: 0

Input Area (sq. miles): 78.53

Canyon Mine

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA* Diesel PM	N/A	N/A	N/A
EJ Index for NATA* Air Toxics Cancer Risk	N/A	N/A	N/A
EJ Index for NATA* Respiratory Hazard Index	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	N/A	N/A	N/A
EJ Index for Lead Paint Indicator	N/A	N/A	N/A
EJ Index for Superfund Proximity	N/A	N/A	N/A
EJ Index for RMP Proximity	N/A	N/A	N/A
EJ Index for Hazardous Waste Proximity	N/A	N/A	N/A
EJ Index for Water Discharger Proximity	N/A	N/A	N/A



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

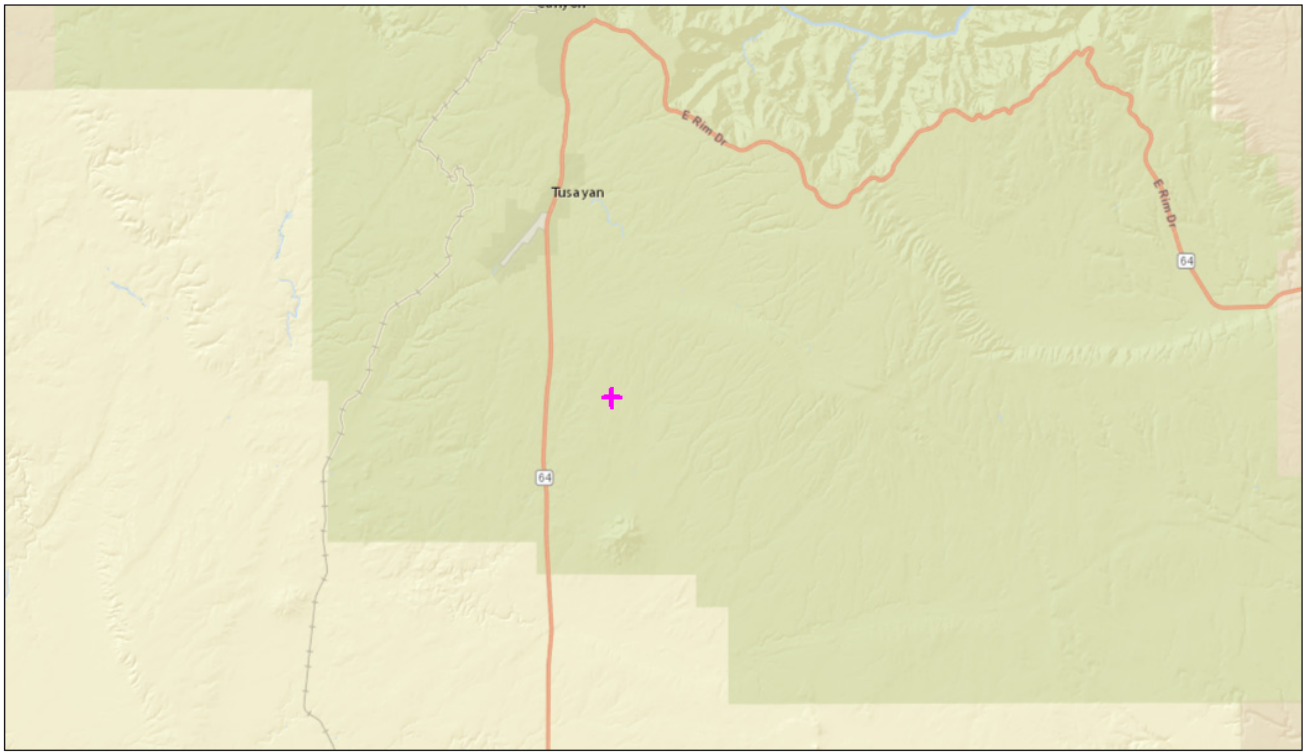
EJSCREEN Report (Version 2016)

5 mile Ring Centered at 35.882777,-112.096110, ARIZONA, EPA Region 9

Approximate Population: 0

Input Area (sq. miles): 78.53

Canyon Mine



August 16, 2016

Digitized Point

1:288,895

0 2.5 5 10 mi

0 4 8 16 km

Sources: Esri, HERE, DeLorme, USGS, Intermap, Increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)

5 mile Ring Centered at 35.882777,-112.096110, ARIZONA, EPA Region 9

Approximate Population: 0

Input Area (sq. miles): 78.53

Canyon Mine

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	N/A	7.62	N/A	9.37	N/A	9.32	N/A
Ozone (ppb)	N/A	54.8	N/A	51	N/A	47.4	N/A
NATA* Diesel PM (µg/m^3)	N/A	1.11	N/A	0.978	N/A	0.937	N/A
NATA* Cancer Risk (lifetime risk per million)	N/A	44	N/A	43	N/A	40	N/A
NATA* Respiratory Hazard Index	N/A	1.5	N/A	2	N/A	1.8	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	N/A	830	N/A	1100	N/A	590	N/A
Lead Paint Indicator (% Pre-1960 Housing)	N/A	0.091	N/A	0.24	N/A	0.3	N/A
Superfund Proximity (site count/km distance)	N/A	0.078	N/A	0.15	N/A	0.13	N/A
RMP Proximity (facility count/km distance)	N/A	0.39	N/A	0.57	N/A	0.43	N/A
Hazardous Waste Proximity (facility count/km distance)	N/A	0.064	N/A	0.11	N/A	0.072	N/A
Water Discharger Proximity (facility count/km distance)	N/A	0.19	N/A	0.2	N/A	0.31	N/A
Demographic Indicators							
Demographic Index	N/A	41%	N/A	47%	N/A	36%	N/A
Minority Population	N/A	43%	N/A	58%	N/A	37%	N/A
Low Income Population	N/A	39%	N/A	36%	N/A	35%	N/A
Linguistically Isolated Population	N/A	5%	N/A	9%	N/A	5%	N/A
Population With Less Than High School Education	N/A	14%	N/A	17%	N/A	14%	N/A
Population Under 5 years of age	N/A	7%	N/A	7%	N/A	6%	N/A
Population over 64 years of age	N/A	15%	N/A	13%	N/A	14%	N/A

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EJSCREEN Report (Version 2016)

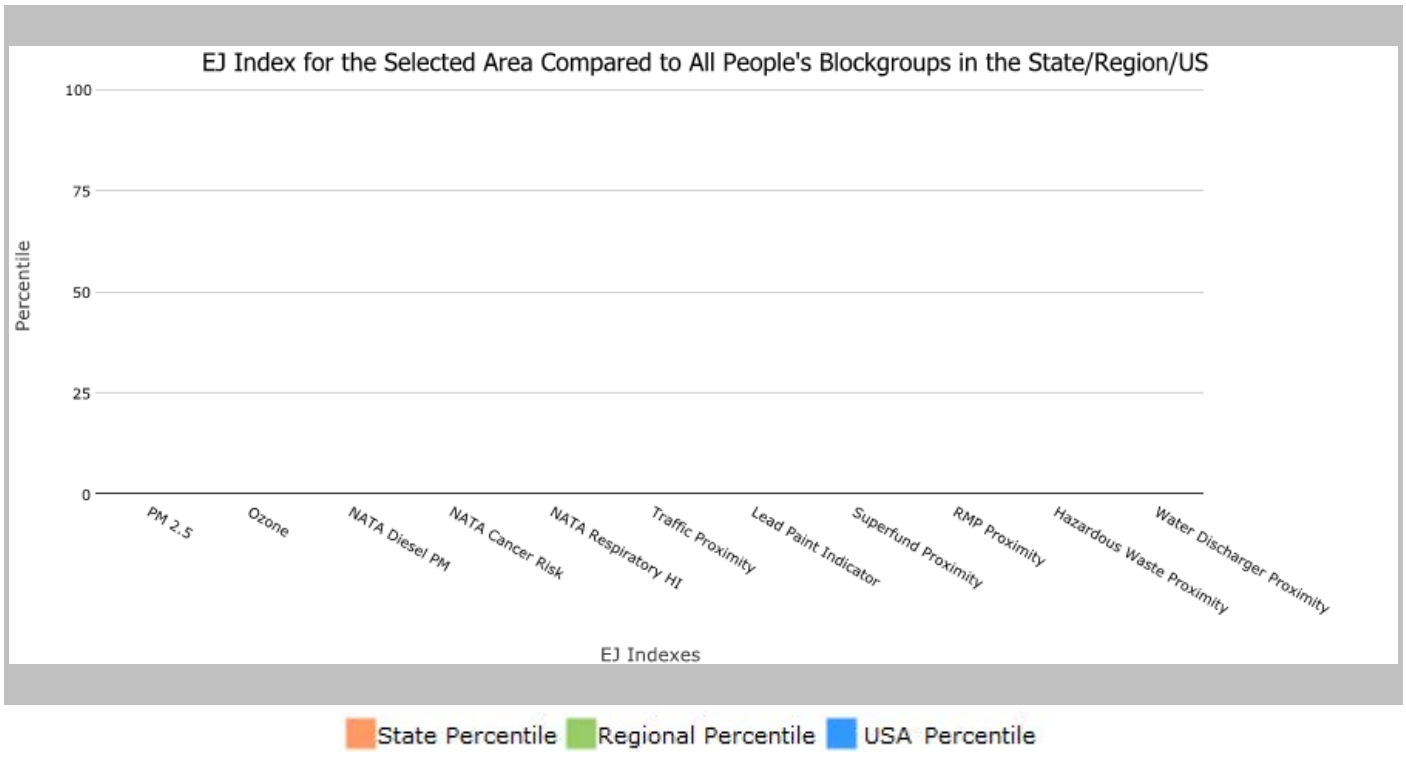
5 mile Ring Centered at 36.629201,-112.919961, ARIZONA, EPA Region 9

Approximate Population: 0

Input Area (sq. miles): 78.53

EZ Mine

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA* Diesel PM	N/A	N/A	N/A
EJ Index for NATA* Air Toxics Cancer Risk	N/A	N/A	N/A
EJ Index for NATA* Respiratory Hazard Index	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	N/A	N/A	N/A
EJ Index for Lead Paint Indicator	N/A	N/A	N/A
EJ Index for Superfund Proximity	N/A	N/A	N/A
EJ Index for RMP Proximity	N/A	N/A	N/A
EJ Index for Hazardous Waste Proximity	N/A	N/A	N/A
EJ Index for Water Discharger Proximity	N/A	N/A	N/A



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EJSCREEN Report (Version 2016)

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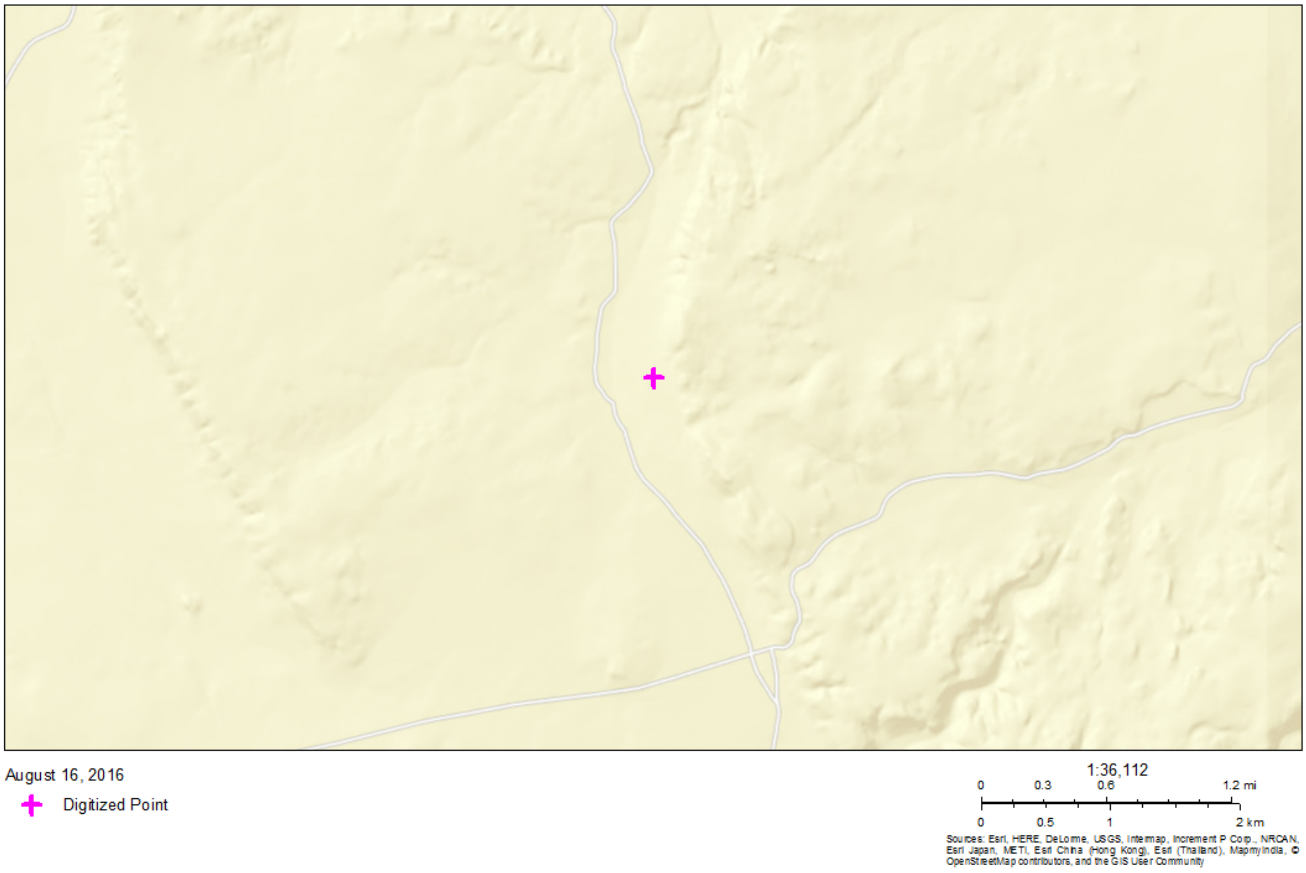
EZ Mine



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)

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