

STATEMENT OF BASIS

Acme Brick Tile & Stone, Inc. – Montgomery Plant
Montgomery, Alabama
Montgomery County
209-0011

This proposed Title V Major Source Operating Permit (MSOP) renewal is issued under the provisions of ADEM Admin. Code r. 335-3-16. The above named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

Acme Brick Tile & Stone, Inc. -Montgomery Plant (Acme Brick) was issued its MSOP on February 5, 2016, with an effective date of February 5, 2016, and an expiration date of February 4, 2021. Per ADEM Admin. Code r. 335-3-16-.12(2), an application for permit renewal shall be submitted at least six (6) months, but not more that eighteen (18) months, before the date of expiration of the permit. The initial renewal application was received on July 29, 2020.

Facility Description

Acme Brick is a clay brick manufacturing plant in Montgomery, Montgomery County, Alabama. The following are significant sources of air pollutants at this facility:

- Clay Preparation
 - Clay Screens (S-1)
Clay Disintegrator (DS-1)
 - Conveyor Belt Drops
- Forming and Coating
 - Sand Coating and Texturing (C-2)
- Sand Processing
 - Sand Dryer (SD-1)
 - 5-Ton Rotary Blender (RB-1)
- Tunnel Kilns 1 and 2 and Dryer
 - Tunnel Kilns 1 and 2 (Tk-1 and TK-2) w/ Dry Lime Injection Fabric Filter (DIFF-1)
 - Brick Dryers Nos 1-4 (D-1, D-2, D-3, and D-4)

The following is a summary of facility-wide controlled emissions and the reported 2019 actual emissions:

Pollutant	Potential Emissions (TPY)	2019 Actual Emissions (TPY)
PM _{total}	84.25	7.52
PM _{filterable}	46.17	0.68

PM ₁₀	67.55	0.68
PM _{2.5}	64.92	0.68
PM _{con}	38.09	1.13
SO ₂	64.69	37.88
NO _x	33.92	19.79
CO	115.7	67.85
VOC	5.21	3.06
Total HAP	2.46	0.14
HF	0.27	0.19
HCl	1.08	0.28
GHG (CO ₂ e)	43,408	-

Renewal Notes

1. Add the sand dryer as a significant emissions source at the facility
2. Remove the primary clay crusher from the permit. The primary crusher was removed from service in approximately 2002. There were plans to install an additional crushing line but they were never implemented.
3. Update the Emission Point No. G-1, Grinder to Emission Point No. DS-1, Disintegrator to be consistent with site terminology.
4. Remove Emission Standard Proviso No. 2 for the clay body preparation as there are no control devices associated with these operations.
5. Remove the conveyor and transfer system from the permit summary page since they are considered insignificant.
6. Add applicable NSPS Subpart UUU requirements for the sand dryer.
7. The Pug Mill No. 1 and Pug Mill No. 2 were determined to be insignificant.
8. Potential emissions were updated to reflect different emissions factors than previously used.
9. Update the PSD avoidance limit of 1.29 lb/hr for emissions from Baghouse No. 2. The relaxed limit corresponds to the applicable NSPS Subpart UUU emissions standard of 0.025 gr/dscf. During the original permitting of the rotary blender, Acme Brick accepted a PSD avoidance limit of 2.0 lb/hr. This limit was reduced to 0.10 lb/hr during the permitting of the shale processing equipment; however, the installation of the shale processing equipment was never completed.
10. Remove the hourly HAP emissions limit for the tunnel kilns and only include the annual emissions limit of 9.9 TPY of any single HAP or 23.5 TPY of any combinations of HAPs. The annual HAP limit will ensure the site remains a minor HAP source.
11. Add Method 320 if 40 CFR 63, Appendix A, as an additional method to demonstrate compliance, if required for the HF and HCl emission limitations.
12. Updated Compliance Assurance Monitoring (CAM) requirements for the DIFF
13. Added CAM requirements for Baghouse BH-1 and BH-2
14. Reconciled emission estimates for the brick dryers to remove products of combustion
15. Added provisions regarding bypass limitations for the tunnel kilns.
16. Added hydrogen fluoride and hydrogen chloride testing requirements for the tunnel kilns.

17. Changed the particulate matter emission limit of the brick dryers from an individual limit of 4.0 lb/hr to a combined limit of 4.11 lb/hr.

Clay Preparation

The Clay Preparation operations consist of the following sources: Clay Screens (S-1) and the Clay Disintegrator (DS-1), and associated conveyor drop points. No control devices are used to control the emissions from these sources.

Mined clay is hauled by truck and transferred directly to the clay preparation process or to the covered clay stockpile. Clay is transferred by a front-end loader to one of two apron feeders and conveyed to the grinding building where it is screened by three vibratory screens. Oversized material is conveyed to the disintegrator for grinding. The output from the disintegrator returns to the screens and repeated. Properly sized material is transferred to the ground clay storage shed located inside the grinding building.

Applicability

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

Rule 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), “*Visible Emissions*”.

Rule 335-3-4-.01(1)

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions for Process Industries – General*”.

Rule 335-3-4-.04(1)

- This process has an enforceable limit in place in order to prevent it from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

Rule 335-3-14-.04 [Anti-PSD]

- The clay screens (S-1), clay grinder (G-1), and associated conveyor drop points are affected sources at a nonmetallic mineral processing plant according to §60.670(a). Therefore, they are subject to the applicable requirements of 40 CFR 60 Subpart OOO, “*Standards of Performance for Nonmetallic Mineral Processing Plants*”.

40 CFR 60 Subpart OOO, §60.670(a)

- These units are not subject to the applicable requirements of 40 CFR 64, “*Compliance Assurance Monitoring*”, as described in General Proviso No. 33.

40 CFR 64, §64.2Emission Standards**Opacity:**

- Fugitive emissions from any grinding mills, screening operations, bucket elevators, transfer points on belt conveyors, bagging operations, storage bins, enclosed truck or railcar loading station or from any other affected facility shall not exceed 10% opacity.

40 CFR Part 60 Subpart OOO, §60.670 Table 3

- Transfer points on a conveyor belt or any other affected source that is enclosed in a building must comply with the emission limits in §60.672(a) and (b), or the building enclosing the affected facility or facilities must comply with the following emission limits:
 - Fugitive emissions from the building openings (except for vents as defined in §60.671) shall exhibit no greater than 7% opacity.

40 CFR Part 60 Subpart OOO, §60.672(e)

- Vents (as defined in §60.671) in the building must meet the applicable stack emission limits and compliance requirements in Table 2 of Subpart OOO.

40 CFR Part 60 Subpart OOO, §60.672(e)

- **Rule 335-3-4-.01(1)(a)** states that no person shall emit to the atmosphere from any source of emissions, particulate matter of an opacity greater than twenty percent (20%) over a six (6) minute period. **Rule 335-3-4-.01(1)(b)** states that during one six minute period in any sixty minute period a person may discharge into the atmosphere from any source of emissions, particulate of an opacity not greater than that designated as forty percent (40%) opacity. All other sources in this operation would be subject to this regulation.

Rule 335-3-4-.01**Particulate Matter:**

- The particulate emission rate from the grinding and screening operations shall not exceed the lesser of 2.5 lb/hr or the allowable set by the equations in Rule 335-3-4-.04:

$$E = 3.59P^{0.62} \left(P < 30 \frac{\text{tons}}{\text{hr}} \right)$$

or

$$E = 17.31P^{0.16} \left(P \geq 30 \frac{\text{tons}}{\text{hr}} \right)$$

Where:

E=Emissions in lb/hr

P=Process weight in tons/hour.

Rule 335-3-4-.04(1) & Rule 335-3-14-.04 [Anti-PSD]

Expected Emissions

- According to the application, potential emissions are based on AP-42 emission factors and 8,760 hrs/yr.

Source #	Pollutant	Emission Rate	
		lb/hr	TPY
S-1 and DS-1	PM	0.58	2.53
	PM ₁₀	0.053	0.23
	PM _{2.5}	0.053	0.23

Compliance and Performance Test Methods and Procedures

- Method 5 or 17 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 9 or 22 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

- Performance tests shall be conducted in accordance with §60.8. The facility shall use as reference methods and procedures those outlined in Appendix A. Alternatively those methods specified in §60.675 may be referenced.

40 CFR Subpart OOO, §60.675

Periodic Monitoring

- Instantaneous visible emissions checks of these sources shall be conducted weekly while in operation:
 - If visible emissions are noted at any time, corrective action shall be initiated within 2 hours to reduce the emissions. After corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Rule 335-3-16-.05

- The facility is not subject to the periodic monitoring requirements in §60.674(c) because the affected sources were built prior to April 22, 2008, which is the date the monitoring requirement came into effect.

40 CFR Part 60 Subpart OOO, §60.674(c)

Recordkeeping and Reporting

- The facility shall maintain a record of all inspections, including visible emissions checks, any problems noted, and corrective actions. Each record shall be maintained for a period of five years from the date of generation.

Rule 335-3-16-.05

- The facility shall submit a written report of exceedances to the Department semi-annually.

Rule 335-3-16-.05

- The facility is not subject to the record keeping requirements in §60.676(1) because the affected sources were built prior to April 22, 2008, which is the date the record keeping requirement came into effect.

40 CFR Part 60 Subpart OOO, §60.676(1)

Sand Processing

The Sand Processing operations consist of the Sand Dryer (SD-1) and the Rotary Blender (RB-1) Particulate emissions from the Rotary Blender (RB-1) and the Sand Dryer (SD-1) are controlled by the sand room Baghouse BH-2.

Brick coatings are prepared in the sand room located in a separate building from the manufacturing building. Sand from the covered sand storage area is loaded by a front-end loader into a hopper that feeds the sand dryer. After drying, the sand is transferred to the 5-ton rotary blender where dried sand and coloring are mixed according to the brick being produced. The coloring materials

include feldspars, nepheline syenite, iron oxide, kaolin, and rutile. The resulting mixture is loaded into totes under a hood for transport to the coating and texturing process. All exhaust from the sand room is controlled by a baghouse. Emissions from the sand storage shed are fugitive and insignificant.

Applicability

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

Rule 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), “*Visible Emissions*”.

Rule 335-3-4-.01(1)

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions for Process Industries – General*”.

Rule 335-3-4-.04(1)

- The baghouse (BH-2) stack has an enforceable limit in place in order to prevent these units from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

Rule 335-3-14-.04 [Anti-PSD]

- The sand dryer is subject to the applicable requirements of 40 CFR 60 Subpart UUU, “Standards of Performance for Calciners and Dryers in Mineral Industries”.

40 CFR 60 Subpart UUU, §60.730(a)

- These units are subject to the applicable requirements of 40 CFR 64, “*Compliance Assurance Monitoring*”, as described in General Proviso No. 33.

40 CFR 64, §64.2

Emission Standards

Opacity:

- **Rule 335-3-4-.01(1)(a)** states that no person shall emit to the atmosphere from any source of emissions, particulate matter of an opacity greater than twenty percent (20%) over a six

(6) minute period. **Rule 335-3-4-.01(1)(b)** states that during one six minute period in any sixty minute period a person may discharge into the atmosphere from any source of emissions, particulate of an opacity not greater than that designated as forty percent (40%) opacity. This operation would be subject to this regulation.

Rule 335-3-4-.01

- Emissions discharged from the Sand Dryer must not exceed 10 percent (10%) opacity, unless the emissions are discharged from an affected facility using a wet scrubbing control device.

40 CFR §60.732(b)

Particulate Matter:

- The particulate emission rate from the Rotary Blender (RB-1) shall not exceed the lesser of 1.29 lbs/hr or the allowable set by ADEM Admin. Code r. 335-3-4-.04(1).

Rule 335-3-4-.04(1) & Rule 335-3-14-.04 [Anti-PSD]

- The particulate emission rate from the Sand Dryer shall not exceed 0.025 gr/dscf.

40 CFR 60 Subpart UUU, §60.732(a)

Expected Emissions

- According to the application, potential emissions are based on AP-42 emission factors and 8,760 hrs/yr.

Source #	Pollutant	Emission Rate	
		lb/hr	TPY
BH-2	PM	1.29	5.63
	PM ₁₀	1.17	5.10
	PM _{2.5}	1.17	5.10
	NO _x	5.29E-2	0.23
	CO	4.45E-2	0.19
	VOC	2.91E-3	1.28E-2
	SO ₂	3.18E-4	1.39E-3
	CO _{2e}	63.23	277
	Total HAP	1.00E-3	4.38E-3

Compliance and Performance Test Methods and Procedures

- Method 5 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 9 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

Periodic Monitoring

- Each source permitted under this process shall be observed on a weekly basis for any visible emissions. Whenever any visible emissions are observed, maintenance inspections and/or corrective action to reduce the visible emissions are to be initiated within two hours, followed by an additional observation to confirm the visible emissions have ceased.

Rule 335-3-16-.05

- Each pollution control device shall be inspected and cleaned at least annually.

Rule 335-3-16-.05

Recordkeeping and Reporting

- The facility shall maintain a record of all inspections, including visible emissions checks, Method 9 observations, any problems noted, and corrective actions. Each record shall be maintained for a period of five years from the date of generation.

Rule 335-3-16-.05

- The facility shall submit a written report of exceedances of the stack opacity to the Department semi-annually.

Rule 335-3-16-.05

Forming and Coating

The Forming and Coating operation consists of the Sand Coating and Texturing (C-2). Particulate emissions from the Sand Coating and Texturing (C-2) process are controlled by the manufacturing Baghouse (BH-1).

The ground clay, sand, and granite are loaded into feeders and metered onto conveyors that carry the materials to Pug Mill No. 2 for mixing. The mixture is then conveyed to the Mixed Material Feeder located inside the manufacturing building. The Mixed Material Feeder then feeds Pug Mill

No. 1 where water is added, and the mixture is discharged into a vacuum chamber. The vacuum chamber removes air from the material, which is then extruded through a die to form a continuous column of brick. Coatings of sand and coloring are applied to the brick column as it leaves the extruder to impart color and texture. Excess coatings that do not adhere to the brick column fall onto a conveyor and are recycled to the process. The coated column of brick is conveyed to the auto-setter where it is cut into individual bricks and stacked on kiln cars.

Applicability

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

Rule 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), “*Visible Emissions*”.

Rule 335-3-4-.01(1)

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions for Process Industries – General*”.

Rule 335-3-4-.04(1)

- The baghouse (BH-1) has an enforceable limit in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

Rule 335-3-14-.04 [Anti-PSD]

- These units are subject to the applicable requirements of 40 CFR 64, “*Compliance Assurance Monitoring*”, as described in General Proviso No. 33.

40 CFR 64, §64.2

Emission Standards

Opacity:

- **Rule 335-3-4-.01(1)(a)** states that no person shall emit to the atmosphere from any source of emissions, particulate matter of an opacity greater than twenty percent (20%) over a six (6) minute period. **Rule 335-3-4-.01(1)(b)** states that during one six minute period in any sixty minute period a person may discharge into the atmosphere from any source of

emissions, particulate of an opacity not greater than that designated as forty percent (40%) opacity. This operation would be subject to this regulation.

Rule 335-3-4-.01

Particulate Matter:

- The particulate emission from the Sand Coating and Texturing units shall not exceed the lesser of 1.0 lbs/hr or the allowable set by ADEM Admin. Code r. 335-3-4-.04.

Rule 335-3-4-.04(1)

Expected Emissions

- According to the application, potential emissions are based on emissions factors from AP-42 and 8,760 hrs/yr of operation.

Source #	Pollutant	Emission Rate	
		lb/hr	TPY
BH-1	PM _{total}	0.51	2.25
	PM ₁₀	0.47	2.04
	PM _{2.5}	0.47	2.04

Compliance and Performance Test Methods and Procedures

- Method 5 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 9 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

Periodic Monitoring

- Each source permitted under this process shall be observed on a weekly basis for any visible emissions. Whenever any visible emissions are observed, maintenance inspections and/or corrective action to reduce the visible emissions are to be initiated within two hours, followed by an additional observation to confirm the visible emissions have ceased.

Rule 335-3-16-.05

- Each pollution control device shall be inspected and cleaned at least annually.

Rule 335-3-16-.05

Recordkeeping and Reporting

- The facility shall maintain a record of all inspections, including visible emissions checks, Method 9 observations, any problems noted, and corrective actions. Each record shall be maintained for a period of five years from the date of generation.

Rule 335-3-16-.05

- The facility shall submit a written report of exceedances of the stack opacity to the Department semi-annually.

Rule 335-3-16-.05

Dryers and Two (2) Tunnel Kilns

This process consists of the Brick Dryers Nos. 1-4 (D-1, D-2, D-3, and D-4) and two Tunnel Kilns (TK-1 and TK-2). Emissions of PM, VOC, CO_{2e}, and CH₄ are generated from the Brick Dryers. Emissions of PM, SO₂, NO_x, CO, VOC, HCl, HF, Lead and CO_{2e} are generated from the Tunnel Kilns. Emissions from the tunnel kilns are controlled by Dry Lime Injection with a Fabric Filter (DIFF-1).

The kiln cars proceed to one of two (2) holding rooms before entry into the dryers. There are no sources of combustion that exhaust through the holding rooms. The kiln cars leave the holding areas and proceed into one of four (4) brick dryers. The bricks are gradually heated to approximately 375 F to remove excess water. The heat used in the dryers is recycled heat recovered from the cooling zone of the tunnel kilns. This heat is introduced at the exit of the dryer and travels opposite the flow of the brick. Each dryer has two identical exhaust stacks. Additionally, there is one dump stack on the waste heat duct for each kiln to moderate heat to the dryer.

From the dryers, bricks enter one of two tunnel kilns. Bricks are heated to approximately 2,000 F in the firing zone. During firing, the bricks enter a flashing zone where excess fuel is added to the kiln to create a reducing atmosphere that imparts color to the bricks. After flashing, the bricks enter the cooling zone. Heat from the cooling zone is redirected to the brick dryers. Cooled bricks are unloaded and packaged before being stored or shipped. A bin resides at the end of the packaging line to catch brick rejects. A vacuum system removes excess sand and coating on the kiln cars after bricks are removed. The kilns only fire natural gas, and PM, SO₂, HF, and HCl emissions are controlled by a dry lime injection fabric filter (DIFF). Hydrated lime is delivered by a blower truck and unloaded to a 100-ton fresh lime silo. Transfer of the lime to the DIFF is from the bottom of the silo in an enclosed system. The spent lime is stored in a 100-ton waste lime silo before being

loaded by nozzle onto a truck or roll off hopper for off-site disposal. Emissions from bat loss drop, kiln car cleaning, the lime silos, and brick packaging are insignificant.

Applicability

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

Rule 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), “*Visible Emissions*”.

Rule 335-3-4-.01(1)

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions for Process Industries – General*”.

Rule 335-3-4-.04(1)

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

Rule 335-3-14-.04 [Anti-PSD]

- This facility has enforceable limits in place in order to prevent it from being subject to the provisions of 40 CFR Subpart JJJJJ, “*National Emission Standards for Hazardous Air Pollutants and Structural Clay Products Manufacturing*”.

40 CFR 63 Subpart JJJJJ

- The two Tunnel Kilns (TK-1 and TK-2) are subject to the applicable requirements of 40 CFR 64, “*Compliance Assurance Monitoring*”, as described in General Proviso No. 33.

40 CFR 64, §64.2

Emission Standards

Opacity:

- **Rule 335-3-4-.01(1)(a)** states that no person shall emit to the atmosphere from any source of emissions, particulate matter of an opacity greater than twenty percent (20%) over a six (6) minute period. **Rule 335-3-4-.01(1)(b)** states that during one six minute period in any

sixty minute period a person may discharge into the atmosphere from any source of emissions, particulate of an opacity not greater than that designated as forty percent (40%) opacity. This operation would be subject to this regulation.

Rule 335-3-4-.01

Particulate Matter:

- The particulate emissions from each Tunnel Kiln (TK-1 and TK-2) shall not exceed the lesser of 15.0 lb/hr or the allowable set by ADEM Admin. Code r. 335-3-4-.04.

Rule 335-3-4-.04(1) & Rule 335-3-14-.04 [Anti-PSD]

- The combined particulate matter emissions from the Dryers (D-1, D-2, D-3, and D-4) shall not exceed the lesser of 4.11 lb/hr or the allowable set by ADEM Admin. Code r. 335-3-4-.04.

Rule 335-3-4-.04(1) & Rule 335-3-14-.04 [Anti-PSD]

HF and HCl:

- The hydrogen fluoride emissions from each Tunnel Kiln (TK-1 and TK-2) shall not exceed 9.9 TPY, as determined by EPA Method 26A of 40 CFR 60, Appendix A or Method 320 of 40 CFR 63, Appendix A in order to avoid becoming subject to 40 CFR 63 Subpart JJJJ.

40 CFR 63 Subpart JJJJ & Rule 335-3-16-.03

- The hydrogen chloride emissions from each Tunnel Kiln (TK-1 and TK-2) shall not exceed 9.9 TPY, as determined by EPA Method 26A of 40 CFR 60, Appendix A or Method 320 of 40 CFR 63, Appendix A in order to avoid becoming subject to 40 CFR 63 Subpart JJJJ.

40 CFR 63 Subpart JJJJ & Rule 335-3-16-.03

- Combined HAP emissions shall not exceed 23.5 TPY in order to avoid becoming subject to 40 CFR 63 Subpart JJJJ.

40 CFR 63 Subpart JJJJ & Rule 335-3-15-.03

Expected Emissions

- According to the application, potential emissions are based on AP-42 emissions factors, and 8,760 hrs/yr of operation.

Source #	Pollutant	Emission Rate	
		lb/hr	TPY

D-1-D-4	PM _{total}	4.11	18.0
	PM _{fil}	1.69	7.41
	PM _{con}	2.42	10.59
	PM ₁₀	3.72	16.31
	PM _{2.5}	3.72	16.37
	VOC	0.66	2.89
	CH ₄	0.44	1.93
	CO _{2e}	10.99	48.13
DIFF	PM _{total}	10.21	44.74
	PM _{fil}	3.94	17.24
	PM _{con}	6.28	27.50
	PM ₁₀	9.26	40.55
	PM _{2.5}	9.26	40.55
	CO	26.37	115.5
	NO _x	7.69	33.69
	SO ₂	14.72	64.49
	VOC	0.53	2.31
	HF	0.062	0.27
	HCl	0.25	1.08
	Lead	3.30E-3	1.44E-2
	Total HAP	0.56	2.45
	CO _{2e}	12,236	43,038

Compliance and Performance Test Methods and Procedures

- Method 5 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 9 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

- Method 26A of 40 CFR 60, Appendix A, shall be used in the determination of HCl and HF.

Rule 335-3-1-.05

- Method 320 of 40 CFR 63, Appendix A, shall be used as an additional method to demonstrate compliance with HF and HCl emission limitations.

Rule 335-3-1-.05

Periodic Monitoring

- An observation of each emissions point associated with the dryers will be accomplished at least weekly. If visible emissions are noted at any time, corrective action shall be initiated within 2 hours to reduce the emissions. After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Rule 335-3-16-.05(c)

- Instantaneous visible emissions checks of the tunnel kiln stacks shall be conducted weekly while in operation:
 - If instantaneous visible emissions are greater than 10% and are not corrected within a period of 1 hour, a Method 9 visible emissions observation shall be conducted within 4 hours of the observations.
 - Maintenance shall be performed as needed. All corrective action and observed problems shall be recorded. After the corrective action has been performed, the permittee shall conduct another visual check to ensure the visible emissions have been reduced.

Rule 335-3-16-.05 & 40 CFR 64

- The facility shall maintain free-flowing lime in the feed hopper or silo and to the DIFF at all times for continuous injection systems; the lime feed rate shall be maintained, on a per ton of product basis, at or above the level established during the most recent performance test.

Rule 335-3-16-.05 & 40 CFR 64

- Prior to the shutdown of the tunnel kiln control device, a request shall be sent to the Department to justify the need for the routine maintenance activities and the frequency of the maintenance activities. The facility must include the following information in the request:
 - Explanation as to why the maintenance cannot be accomplished during kiln shutdowns.
 - Information should be provided stating whether the continued operation of the affected source will result in fewer emissions than shutting the source down while the maintenance is performed.
 - A description of how the facility plans to minimize emissions during the maintenance.

Rule 335-3-16-.05

- Routine control device maintenance shall not exceed 5 percent of the annual operating uptime for each kiln.

Rule 335-3-16-.05

- The facility must minimize the time period during which the kiln is operating and the control device is offline.

Rule 335-3-16-.05

- Hydrogen Fluoride (HF) and Hydrogen Chloride (HCl) emission stack tests shall be conducted on the Tunnel Kilns at least once prior to Permit renewal, but no more than 60 months from the most recent stack test.
 - o Each test shall be conducted in accordance with the methods specified in the *Compliance and Performance Test Methods and Procedures* section of this subpart of the Permit.
 - o Each test shall consist of three separate runs. Each run must last at least one hour.
 - o During each test, the amount of controlled (outlet) and uncontrolled (inlet) HCl and HF emissions emitted from Tunnel Kilns shall be recorded.

Rule 335-3-16-.05

Recordkeeping and Reporting

- The facility shall maintain a record of all inspections, including visible emissions checks, Method 9 observations, performance tests, any problems noted, and corrective actions. Each record shall be maintained for a period of five years from the date of generation.

Rule 335-3-16-.05

- A report documenting the results of each stack test shall be submitted to the Department within 60 days of the date of the test.

Rule 335-3-16-.05

- Annual HF emissions from the operation of the tunnel kilns, as determined on a rolling twelve (12) month total, shall be calculated as follows:

$$\frac{\text{Tons HF}}{\text{12 – month period}} = \frac{X}{\text{12 – month period}} \times EF_{\text{HF}} \frac{\text{lb}}{\text{ton}} \times \frac{1 \text{ ton}}{2,000 \text{ lb}}$$

Where X = recorded tons of production during the 12-month period and EF_{HF} = emission factor from the most recent Department approved stack test.

Rule 335-3-16-.05(c)1

- Annual HCl emissions from the operation of the tunnel kilns, as determined on a rolling twelve (12) month total, shall be calculated as follows:

$$\frac{\text{Tons HCl}}{12 - \text{month period}} = \frac{X}{12 - \text{month period}} \times EF_{\text{HCl}} \frac{\text{lb}}{\text{ton}} \times \frac{1 \text{ ton}}{2,000 \text{ lb}}$$

Where X = recorded tons of production during the 12-month period and EF_{HCl} = emission factor from the most recent Department approved stack test.

Rule 335-3-16-.05(c)1

- Total HF emissions produced while the tunnel kiln control device is bypassed, shall be calculated as follows:

$$\text{Tons HF} = X \left(\frac{\text{tons}}{\text{hr}} \right) \times B \text{ (hr)} \times EF_{\text{HF}} \left(\frac{\text{lb}}{\text{ton}} \right) \times \frac{1 \text{ ton}}{2,000 \text{ lb}}$$

Where X = recorded production during bypass, B = recorded number of hours in bypass, and EF_{HF} = uncontrolled emission factor from the most recent Department approved stack test.

Rule 335-3-16-.05(c)1

- Total HCl emissions produced while the tunnel kiln control device is bypassed, shall be calculated as follows:

$$\text{Tons HCl} = X \left(\frac{\text{tons}}{\text{hr}} \right) \times B \text{ (hr)} \times EF_{\text{HCl}} \left(\frac{\text{lb}}{\text{ton}} \right) \times \frac{1 \text{ ton}}{2,000 \text{ lb}}$$

Where X = recorded production during bypass, B = recorded number of hours in bypass, and EF_{HCl} = uncontrolled emission factor from the most recent Department approved stack test.

Rule 335-3-16-.05(c)1

- The facility shall submit a written report of exceedances of the stack opacity to the Department semi-annually.

Rule 335-3-16-.05

Environmental Justice

ADEM utilized the EJSCREEN screening tool to perform an analysis of the area. Please refer to Appendix A.

Recommendation

Based on the above analysis, I recommend that, pending the 30-day public comment period and the 45-day EPA review period, Acme Brick be issued a renewal for Major Source Operating Permit No. 209-0011. The facility should be able to meet the requirements of this permit and all applicable state and federal air pollution regulations.

Haley K. Crumpton
Industrial Minerals Section
Energy Branch
Air Division

October 22, 2021

Date

Appendix A
EJSCREEN Results

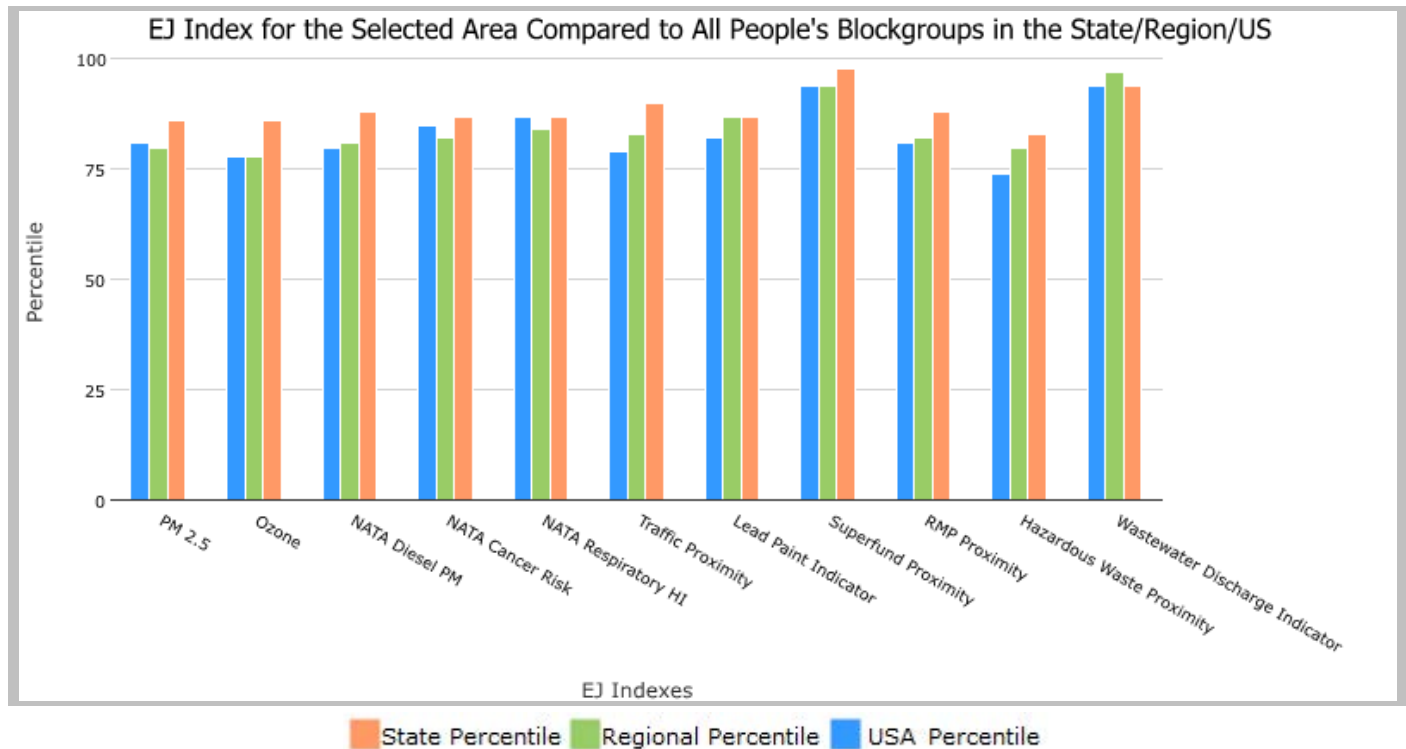
1 mile Ring Centered at 32.394308,-86.304511, ALABAMA, EPA Region 4

Approximate Population: 1,166

Input Area (sq. miles): 3.14

Acme Brick-Montgomery

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	86	80	81
EJ Index for Ozone	86	78	78
EJ Index for NATA* Diesel PM	88	81	80
EJ Index for NATA* Air Toxics Cancer Risk	87	82	85
EJ Index for NATA* Respiratory Hazard Index	87	84	87
EJ Index for Traffic Proximity and Volume	90	83	79
EJ Index for Lead Paint Indicator	87	87	82
EJ Index for Superfund Proximity	98	94	94
EJ Index for RMP Proximity	88	82	81
EJ Index for Hazardous Waste Proximity	83	80	74
EJ Index for Wastewater Discharge Indicator	94	97	94



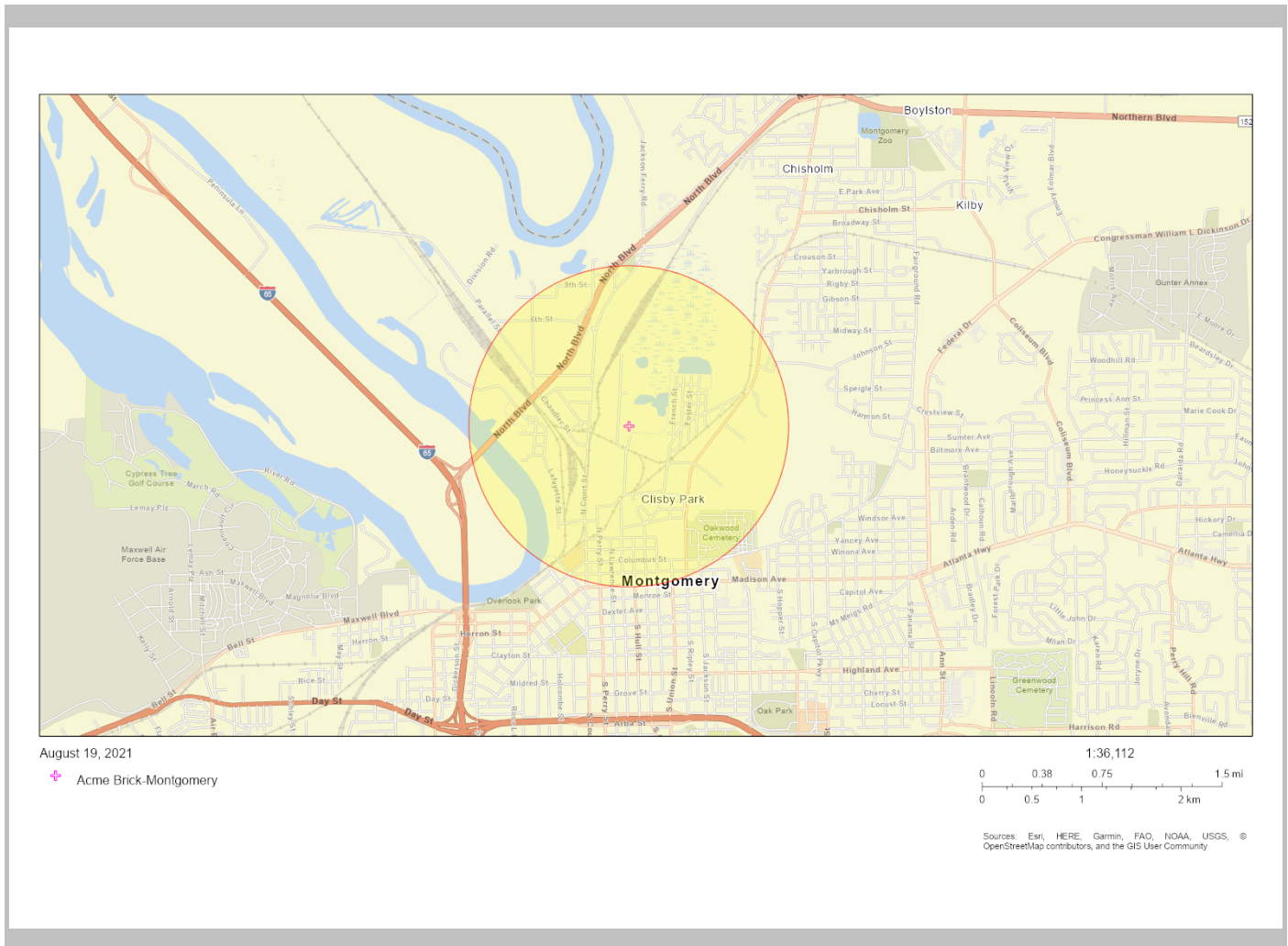
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective 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.

1 mile Ring Centered at 32.394308,-86.304511, ALABAMA, EPA Region 4

Approximate Population: 1,166

Input Area (sq. miles): 3.14

Acme Brick-Montgomery



Sites reporting to EPA	
Superfund NPL	1
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	1

EJSCREEN Report (Version 2020)



1 mile Ring Centered at 32.394308,-86.304511, ALABAMA, EPA Region 4

Approximate Population: 1,166

Input Area (sq. miles): 3.14

Acme Brick-Montgomery

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 $\mu\text{g}/\text{m}^3$)	9.89	9.31	78	8.57	95	8.55	88
Ozone (ppb)	37.5	38	40	38	44	42.9	18
NATA* Diesel PM ($\mu\text{g}/\text{m}^3$)	0.574	0.346	86	0.417	70-80th	0.478	70-80th
NATA* Cancer Risk (lifetime risk per million)	50	43	89	36	95-100th	32	95-100th
NATA* Respiratory Hazard Index	0.8	0.65	91	0.52	95-100th	0.44	95-100th
Traffic Proximity and Volume (daily traffic count/distance to road)	460	220	88	350	79	750	66
Lead Paint Indicator (% Pre-1960 Housing)	0.42	0.18	89	0.15	90	0.28	71
Superfund Proximity (site count/km distance)	0.62	0.054	99	0.083	98	0.13	96
RMP Proximity (facility count/km distance)	0.63	0.41	81	0.6	71	0.74	65
Hazardous Waste Proximity (facility count/km distance)	0.96	0.82	68	0.91	71	5	49
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.093	1.2	89	0.65	93	9.4	88
Demographic Indicators							
Demographic Index	73%	36%	91	37%	91	36%	91
People of Color Population	73%	34%	85	39%	82	39%	80
Low Income Population	74%	38%	94	36%	95	33%	96
Linguistically Isolated Population	2%	1%	80	3%	61	4%	54
Population With Less Than High School Education	34%	14%	95	13%	95	13%	92
Population Under 5 years of age	8%	6%	74	6%	75	6%	73
Population over 64 years of age	11%	16%	26	17%	31	15%	36

* 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

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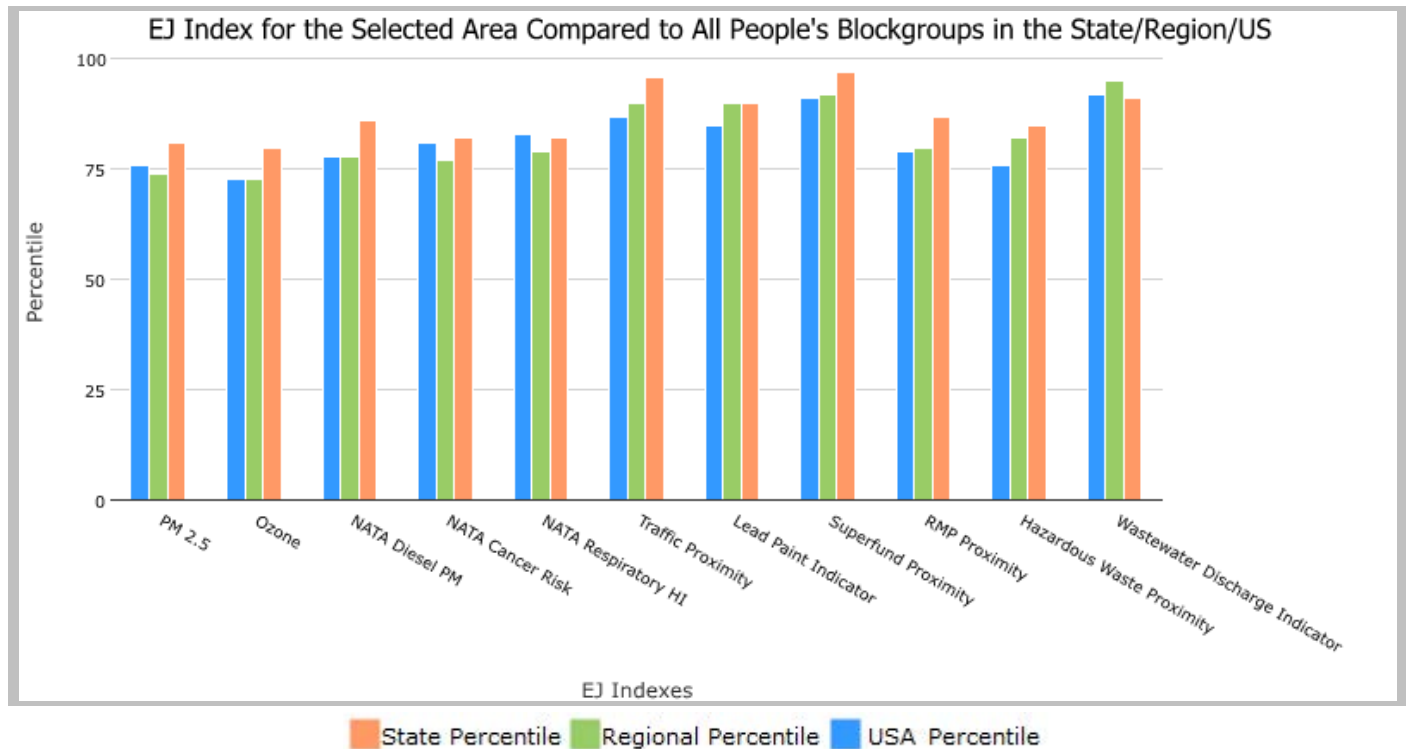
3 miles Ring Centered at 32.394308,-86.304511, ALABAMA, EPA Region 4

Approximate Population: 38,944

Input Area (sq. miles): 28.27

Acme Brick-Montgomery

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	81	74	76
EJ Index for Ozone	80	73	73
EJ Index for NATA* Diesel PM	86	78	78
EJ Index for NATA* Air Toxics Cancer Risk	82	77	81
EJ Index for NATA* Respiratory Hazard Index	82	79	83
EJ Index for Traffic Proximity and Volume	96	90	87
EJ Index for Lead Paint Indicator	90	90	85
EJ Index for Superfund Proximity	97	92	91
EJ Index for RMP Proximity	87	80	79
EJ Index for Hazardous Waste Proximity	85	82	76
EJ Index for Wastewater Discharge Indicator	91	95	92



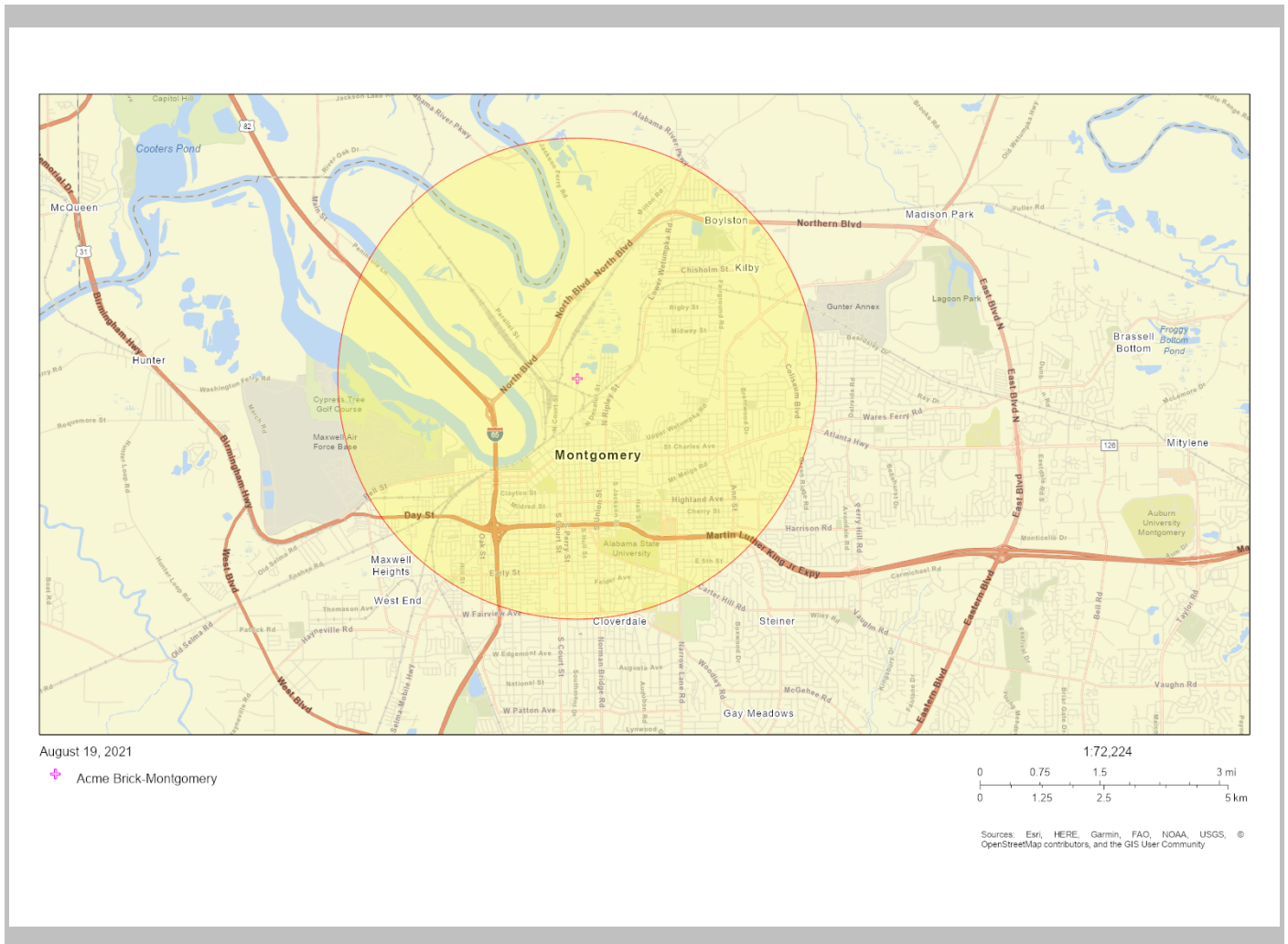
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3 miles Ring Centered at 32.394308,-86.304511, ALABAMA, EPA Region 4

Approximate Population: 38,944

Input Area (sq. miles): 28.27

Acme Brick-Montgomery



Sites reporting to EPA	
Superfund NPL	1
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	3

EJSCREEN Report (Version 2020)



3 miles Ring Centered at 32.394308,-86.304511, ALABAMA, EPA Region 4

Approximate Population: 38,944

Input Area (sq. miles): 28.27

Acme Brick-Montgomery

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 $\mu\text{g}/\text{m}^3$)	9.88	9.31	78	8.57	95	8.55	88
Ozone (ppb)	37.5	38	40	38	44	42.9	18
NATA* Diesel PM ($\mu\text{g}/\text{m}^3$)	0.614	0.346	88	0.417	80-90th	0.478	70-80th
NATA* Cancer Risk (lifetime risk per million)	50	43	90	36	95-100th	32	95-100th
NATA* Respiratory Hazard Index	0.81	0.65	94	0.52	95-100th	0.44	95-100th
Traffic Proximity and Volume (daily traffic count/distance to road)	870	220	94	350	90	750	79
Lead Paint Indicator (% Pre-1960 Housing)	0.6	0.18	94	0.15	95	0.28	82
Superfund Proximity (site count/km distance)	0.38	0.054	99	0.083	96	0.13	93
RMP Proximity (facility count/km distance)	0.67	0.41	82	0.6	73	0.74	67
Hazardous Waste Proximity (facility count/km distance)	1.6	0.82	82	0.91	82	5	60
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.034	1.2	84	0.65	90	9.4	85
Demographic Indicators							
Demographic Index	61%	36%	84	37%	82	36%	83
People of Color Population	66%	34%	82	39%	78	39%	76
Low Income Population	56%	38%	81	36%	82	33%	85
Linguistically Isolated Population	1%	1%	76	3%	56	4%	49
Population With Less Than High School Education	22%	14%	78	13%	81	13%	81
Population Under 5 years of age	7%	6%	65	6%	66	6%	63
Population over 64 years of age	14%	16%	39	17%	45	15%	49

* 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>.

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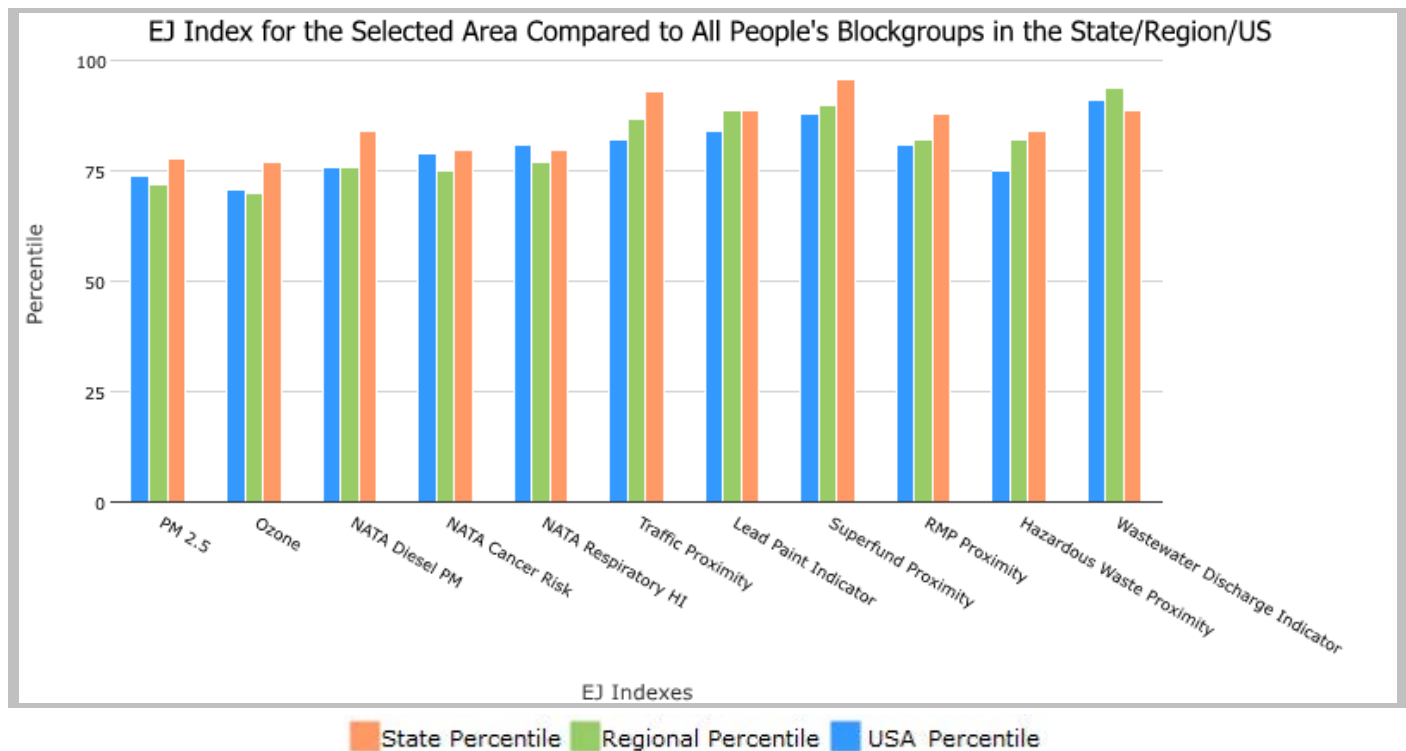
5 miles Ring Centered at 32.394308,-86.304511, ALABAMA, EPA Region 4

Approximate Population: 91,961

Input Area (sq. miles): 78.53

Acme Brick-Montgomery

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	78	72	74
EJ Index for Ozone	77	70	71
EJ Index for NATA* Diesel PM	84	76	76
EJ Index for NATA* Air Toxics Cancer Risk	80	75	79
EJ Index for NATA* Respiratory Hazard Index	80	77	81
EJ Index for Traffic Proximity and Volume	93	87	82
EJ Index for Lead Paint Indicator	89	89	84
EJ Index for Superfund Proximity	96	90	88
EJ Index for RMP Proximity	88	82	81
EJ Index for Hazardous Waste Proximity	84	82	75
EJ Index for Wastewater Discharge Indicator	89	94	91



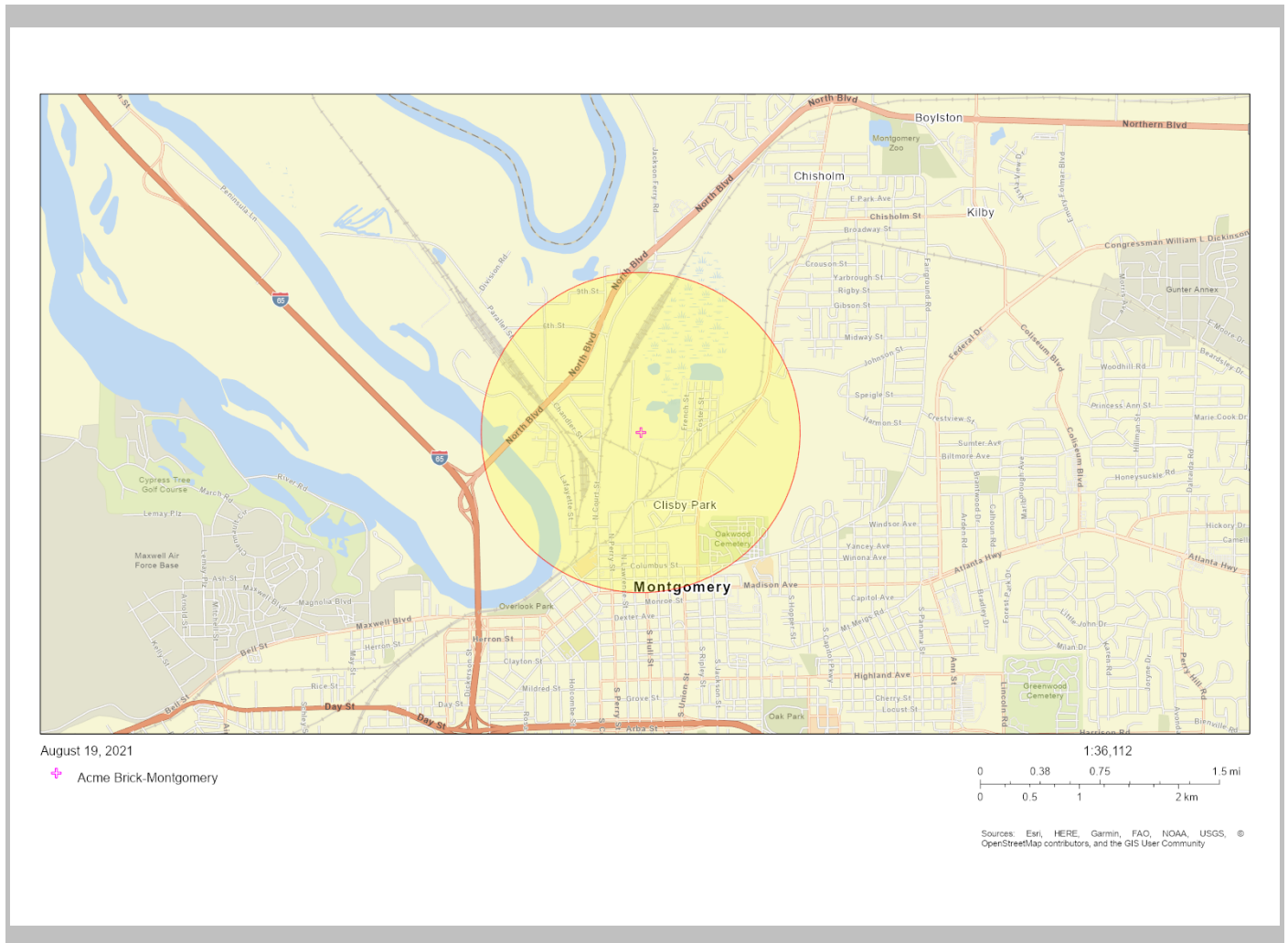
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5 miles Ring Centered at 32.394308,-86.304511, ALABAMA, EPA Region 4

Approximate Population: 91,961

Input Area (sq. miles): 78.53

Acme Brick-Montgomery



Sites reporting to EPA	
Superfund NPL	2
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	8

EJSCREEN Report (Version 2020)



5 miles Ring Centered at 32.394308,-86.304511, ALABAMA, EPA Region 4

Approximate Population: 91,961

Input Area (sq. miles): 78.53

Acme Brick-Montgomery

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 $\mu\text{g}/\text{m}^3$)	9.87	9.31	76	8.57	95	8.55	88
Ozone (ppb)	37.5	38	39	38	43	42.9	18
NATA* Diesel PM ($\mu\text{g}/\text{m}^3$)	0.613	0.346	88	0.417	80-90th	0.478	70-80th
NATA* Cancer Risk (lifetime risk per million)	51	43	91	36	95-100th	32	95-100th
NATA* Respiratory Hazard Index	0.81	0.65	94	0.52	95-100th	0.44	95-100th
Traffic Proximity and Volume (daily traffic count/distance to road)	660	220	92	350	85	750	74
Lead Paint Indicator (% Pre-1960 Housing)	0.47	0.18	90	0.15	92	0.28	75
Superfund Proximity (site count/km distance)	0.28	0.054	98	0.083	94	0.13	90
RMP Proximity (facility count/km distance)	0.7	0.41	83	0.6	73	0.74	68
Hazardous Waste Proximity (facility count/km distance)	1.6	0.82	83	0.91	83	5	60
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.016	1.2	81	0.65	88	9.4	82
Demographic Indicators							
Demographic Index	56%	36%	80	37%	78	36%	79
People of Color Population	63%	34%	81	39%	77	39%	74
Low Income Population	49%	38%	72	36%	74	33%	79
Linguistically Isolated Population	1%	1%	74	3%	54	4%	48
Population With Less Than High School Education	19%	14%	69	13%	74	13%	76
Population Under 5 years of age	7%	6%	62	6%	63	6%	60
Population over 64 years of age	15%	16%	49	17%	54	15%	58

* 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>.

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